Understanding how night work influences the everyday family lives of nurses, their husbands and children

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Abstract

This study provides new insights into lived experiences of night work for women employed as nurses, and for their husbands and children. Night work also acts as a "window" (Hislop and Arber 2003a) onto daily lives in contemporary families, demonstrating the power of normative ideology concerning gendered expectations and "good motherhood."

Using mixed methods and a primarily inductive research design with a broadly interpretive conceptual framework, this study involves twenty families, each including a female nurse aged 30-55, their husband and co-resident children aged 8-18 years. In-depth qualitative interviews are supported and furthered by audio sleep diaries, mood scale, sleep log and saliva sample data collected daily for two weeks.

Findings demonstrate the importance of going beyond the focus within existing shift work research on "impacts" for individuals to consider the social contexts in which night shifts are worked, including family relationships and normative gendered expectations and identities for women as wives and mothers.

Effects of night work are experienced by all family members in preparation and recovery phases as well as during nurses' absence from home while working night shifts.

The power of normative gendered expectations of women as "good" wives and mothers is clearly evident. Women in this study strive to moderate potential influences of night work on their husbands and children, while experiencing significant reductions in sleep duration and significantly worse mood and alertness levels.

Husbands experience increased responsibilities for childcare and other time-critical tasks, alongside more freedom in organising their temporary responsibilities and their own leisure time, often resulting in relaxed evenings and later bed times for husbands and children. For children, their mothers' absence is important but not necessarily negative: they are in the care of other people who may have different expectations of them; and family life feels different without their mother's usual presence.

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Chapter 1 - Introduction

This thesis explores how night work is experienced by women who work as nurses[1] and how their working pattern is experienced by their partners or husbands[2] and co-resident children[3].

1.1 RESPONSIBILITIES AND DEMANDS IN THE CONTEXT OF WOMEN'S NIGHT WORK

In contemporary society, gendered inequalities in expectations about childcare, housework, household management and emotional labour persist (see Hochschild and Machung 2003; see 2006). In addition, women are considered responsible for the physical, social and emotional well-being of their children (see Doucet 2006). Large bodies of research over several decades have documented, discussed, conceptualised and debated the challenges and inequalities and associated benefits and difficulties which are negotiated by the great majority of contemporary women as they combine paid employment with expectations of them as wives and mothers.

The physical demands of night work on sleep and the increased risk of severe sleepiness, digestion problems, mood changes and severe health problems are well documented (Costa 2000; Rajaratnam and Arendt 2001). So how do women who are already negotiating the usual burden of gendered expectations concerning care for their families combine this with the physical challenges of night work? How are meals, cleaning, washing and food shopping organised? Who provides childcare during periods of night work? In what ways are caring and emotional labour carried out? How do these changes influence how women, their husbands and children interact with each other? How are relationships between spouses, between children and parents, and between siblings experienced in the context of night work?

[1] Both nurses and midwives are referred to as nurses throughout this thesis.
[2] Both male partners and spouses are referred to as husbands throughout this thesis. Unless otherwise specified, in this thesis "father" refers to co-resident fathers and stepfathers.
[3] Children and young people aged 8-18 years participating in the study are referred to as children throughout this thesis.

This thesis draws on qualitative interview data and diary data collected over a two week period by nurses, their husbands and children. The thesis focuses on how daily life for the participating families is organised, accomplished and experienced in the context of night work as nurses by wives and mothers. A key theme is the way in which the gendered responsibilities, tasks, caring and emotional labour usually completed by nurses as wives and mothers are accomplished during periods of night work and how these are regarded. Perceptions of night work and its impacts upon these women, their husbands and children and their family lives are also considered in detail.

1.2 PERSONAL MOTIVATIONS AND STUDY DEVELOPMENT

Personal experiences initially prompted interest in the area of women and night work. These insights helped structure my initial engagement with existing literature on shift work and facilitated identification of limitations in empirical research and conceptual understanding concerning the perspectives of female night shift workers and their families regarding the impacts of this pattern of work.

An interest in social constructions of health and especially the ways in which health professionals' work and health is constructed alongside other aspects of their lives led me to study sociology of health and illness and develop analytical awareness of gendered differences in understandings and approaches to health. This allowed me to question social constructions around health, illness and "disease", including power operating in gendered expectations and patterns of behaviour, "moral" expectations around "good" health, and interfaces between experiential knowledge and biomedical knowledge.

Personal experiences around night work also prompted questions about how night work is managed, while also providing personal insights into the physical impacts.

Firstly, as a student volunteer helpline worker and supervisor I had personal experience of supporting callers, supporting and also managing fellow volunteers while doing night shifts and experiencing the physical consequences of short sleep or altered sleep timing. This also prompted awareness of the different strategies employed by students to cope with these changed activity and sleep patterns, while avoiding drawing attention to confidential volunteering activities.

Secondly, I can tie my interest in health professionals' night work to one specific experience while studying and reflecting on social aspects of health. One of my housemates was a female student midwife, doing many placement shifts alongside her course assignments. One morning when we were due a house inspection at 10am I woke to find a polite notice on my housemate's room door requesting that the landlord knock first and allow a few minutes before entering. Given that my housemate had just completed a night shift and the house inspection had been arranged at short notice with no negotiation about timing I was surprised that the note did not simply explain that my housemate was asleep following a night shift and that she should not be disturbed. This prompted me to question the responsibilities and expectations of my housemate and the landlord with regard to sleep needs and rights to expect access to the property at certain times. Although the landlord would be unlikely to change the inspection time to accommodate a night out for his student tenants, had he considered that this time could be difficult for night shift workers? Is this generally considered in planning day time activities? How would this be organised in a family situation with other family members attending school and work? And at weekends and holiday times?

1.3 WOMEN'S NIGHT WORK

In considering appropriate groups of workers with whom to investigate further these questions about doing night work as part of daily lives, the importance of studying women's experiences quickly became apparent. In common with the focus on men within sleep research (see Dzaja, et al. 2005), the majority of literature on night work concerns men working in manufacturing, transport and other industry sectors. There is a lack of knowledge regarding lived experiences of women's night work, especially in middle income or middle class families where women may make a substantial contribution to household income. Given gendered expectations of women as wives and mothers and the ways in which these responsibilities become integrated into aspects of gendered identities, home lives are likely to be central to how night work is organised and experienced by these women. Looking at lived experiences of women night workers specifically then, provides opportunities to consider in detail the ways in which the "separate spheres" of "work" and "family" within the old social scientific tradition (Smart and Neale 1999) are in fact deeply interdependent and diverse. This focus on lived experiences enables inclusion of both bodily and social impacts of night work, while drawing upon understanding of "family practices" (Morgan 1996) and of families in their diversity being achieved through "doing" rather than the old tradition of "the

family" as structure or institution (see Smart 2007). Family lives then, may have important influences on the ways in which women do night work and the impacts which this has for women and for their families. Additionally, just as Ribbens-McCarthy and colleagues (2003:1) have considered in relation to step families, experiences of families where wives and mothers work at night may provide insights about "typical" family lives in addition to differences relating to night work.

1.4 EXISTING RESEARCH CONCERNING NIGHT WORK'S IMPACTS

Research on how night work occurs and is experienced within daily and nightly family lives is very limited. Like research concerning sleep in general (Hislop and Arber 2003c; Williams 2005), the majority of existing research on shift work is primarily physiological and generally negative with regard to night work (Presser 1999). The literature available concerning social consequences of night work is primarily focused on quantitative data and outcomes (for example, rates of couple relationship breakdown (Presser 2000; White and Keith 1990)) rather than how night work is experienced. This is rather surprising given the major change which night work brings to the timing of work and sleep for the night worker and likely consequences for their family. Additionally, given the negative focus of most existing knowledge concerning night work, it might be expected that understanding more about the process of night work would be a priority for conceptualising and aiming to reduce its negative effects.

A small-scale study (n=10) conducted as part of my Masters degree (Thompson 2005) enabled initial exploration of the social consequences of night time work by doctors and nurses. Involving five female and male health professionals and partners as appropriate (the sample included four couples, a single parent and a health professional's partner), this study identified impacts of night work on health professionals' and their partners' sleeping and eating patterns and daily routines. However, the very small sample size and the variety of family, lifecourse and employment circumstances of the participants limited the insights gained about gendered expectations of women who work at night and experiences of night work in the context of family lives.

1.5 STUDY DESIGN AND METHODS

To study the impacts of night work on the lived experiences of contemporary women with domestic expectations and responsibilities, this research has focused on collection of in-depth qualitative interview data and diary data from a relatively small number of family groups (n=20 families; n=74 people). Twenty women working both night shifts and day time shifts as qualified nurses in NHS hospitals, in long term relationships with men, and with one or more co-resident children aged 8-18 years were recruited to the study. These sampling criteria were chosen to facilitate analysis through comparisons with other women and families in similar circumstances. The sampling framework included women, husbands and children including a variety of income groups, and a range of educational circumstances, occupations and working patterns.

The study used mixed methods within a primarily inductive and qualitative study design. Using mixed methods provided a wide range of data from each individual and family, including data about different areas of lived experiences of night work and also some data about physiological effects of night work. This mixed methods approach is considered important because of the focus of previous research and the multifaceted range of influences of night work upon bodies, social lives and responsibilities. The findings of this study thus contribute to the existing body of physiologically focused shift work literature by providing information about sleeping patterns and mood of night workers and their families, while also providing the first insights into lived experiences of night work for women and their families. Given concerns about bias of recall and the limitations of cross-sectional research it was decided to follow the approach of Hislop & Arber (2003a) and colleagues (Meadows, et al. 2008) to collect self-reported sleep, mood and food diary data for a two week period, and also to collect daily actigraphy and saliva sample data for melatonin and cortisol levels during this period. The overall approach of the study was primarily qualitative, with individuals from a small number of families providing detailed information through interviews and audio sleep diaries (see Hislop, et al. 2005) as well as participating in the other study methods. Together, these methods provided detailed information about daily lived experiences and perceptions of night work for female nurses and their families.

1.6 THESIS OUTLINE

The thesis opens with a discussion of pertinent literature concerning night work and its impacts; and the immense body of literature concerning understandings of gendered expectations regarding responsibility for housework and the wellbeing of children, and the challenges of combining this with paid employment. This material is divided into two chapters. The first chapter provides a critical overview of existing understandings of night work and its influences biologically and socially from across a range of social science disciplines. The second chapter discusses, in relation to women's night work, key literature concerning gender, identities, paid and unpaid work. This includes questions around the negative focus of much research concerning night work and the concepts of 'choice' and 'tolerance' in relation to this pattern of work.

The study's conceptual and methodological approach and the methods employed are discussed in the following chapter. This includes information about participants, changes made following the pilot phases and key insights gained from participants' accounts of their participation. Ethical considerations and procedures employed to safeguard participants are also discussed. Information provided to participants and templates for the diaries, logs and questionnaires are included in the Appendices.

Four analysis chapters follow. The first three analysis chapters use the qualitative interview and audio sleep diary data to discuss separately the experiences of children of night working nurses, the experiences of husbands of night working nurses, and the experiences of nurses themselves. This approach enables appropriate focus on the experiences of each group, allowing their accounts to be considered without immediate comparison with the experiences of other family members. The fourth analysis chapter draws upon themes emerging from the qualitative data and discusses how these are supported and furthered by sleep log, mood scale and saliva data which demonstrate effects of night work upon sleep and mood of female nurses, their husbands and children.

Discussion of the study's findings and key conceptual insights in relation to the findings of previous research follows. This includes consideration of similarities and differences between accounts of children, husbands and nurses and what the study's findings suggest about how night work is organised and understood and has influences within these families'

lives. Thesis conclusions summarise the significance and contribution of this study for sociological and shift work literature, discuss the value of this study's approach and research design and present recommendations for future research in relation to empirical areas of study and methodological and conceptual approaches.

Chapter 2 - Night work in social contexts: limitations of current knowledge

2.1 INTRODUCTION

This is the first of two chapters which review existing literature to explain the importance of this study in furthering understanding of the influences of women's night work and to provide the conceptual context for this study. This chapter focuses on existing knowledge concerning night work specifically, while the following chapter reviews literature concerning paid employment and gendered expectations around caring and housework, and nonstandard employment patterns and family lives.

Working at night contravenes what are considered usual patterns for activity and sleep. This includes changes to the body's internal clock, circadian rhythms and sleep, while also erring from norms for daily routines, organisation of family lives and social interaction. While much research has focused on physiological consequences of night work for individual employees and concluded that these are predominantly negative, little detail is known about the lived complexities of night work in terms of family lives. There is limited understanding about how night work and its consequences are experienced on a daily and nightly basis within families. In particular, very little is known about how night work is organised with family lives and whether experiences of night work are patterned by gender.

This chapter opens with an overview of existing knowledge about physiological processes involved in circadian and sleep timing and health risks associated with their disruption. A critical review of the approaches, findings and limitations of previous research which has considered social consequences of night work from within a range of epistemological traditions follows. Finally, the relatively new area of sociological enquiry concerning sleep is discussed.

2.2 PHYSIOLOGY OF CIRCADIAN RHYTHMS, SLEEP AND NIGHT WORK

Most research about night work draws upon knowledge from the field of chronobiology

concerning the physiology of circadian rhythms and sleep, and the ways night work may disrupt these patterns. Chronobiology is literally the "biology of time" and circadian rhythms are regular patterns of hormone secretion and other physiological processes within the body. Chronobiology studies "...adaptations evolved by living organisms to cope with regular geophysical cycles in their environment" (Dunlap, et al. 2004:xvii). For night work and sleep, diurnal (daily) cycles of sleep propensity are most significant. The following sections outline key themes relating to circadian rhythms and research relating to consequences of night work for the circadian timing system.

2.2.1 Circadian rhythms

Chronobiology indicates that the body has an internal clock which generates circadian rhythms: cycles lasting around twenty-four hours, with changes in core body temperature, hormone (e.g. melatonin, cortisol) and sleepiness levels which promote or inhibit sleep according to the stage of the cycle. Circadian rhythms are driven by four factors: the internal and pace-making "biological clock" (situated in the hypothalamic superchiasmatic nuclei); in combination with sleep debt; and time cues or *Zeitgeber* which include environmental light-dark cycles, and social cues, including daily routines and social interaction (see Dunlap, et al. 2004; see Monk 1991:46). However, within the epistemology of Chronobiology, the term *Zeitgeber* can be used only when it has been established that a particular factor exerts influence on circadian rhythms independently of other factors (Leonhard and Randler 2009: 512). Even if it is possible to "control for" social cues, it is likely to be difficult to establish that they influence circadian rhythms independently of other factors. This is because social cues may often occur alongside or in combination with time cues. For example, working at night (particularly on the first night shift) will be affected by sleep debt and also by lighting (it is unlikely that night shifts will be worked in complete darkness, even for nurses).

Within Chronobiology, night work is understood to disrupt circadian rhythms because sleep debt, time cues, social cues and the body's internal "biological clock" become out of phase with each other. People working at night maintain physical activity and social interaction through the night, thus resisting both the biological clock, and environmental and sleep debt cues to sleep. They then try to sleep during the day, when despite sleep debt, the biological clock, light conditions and expectations of social interaction render sleep more difficult to attain and maintain. Accordingly, during night work, "inherent conflict can exist between a wilful human being and the goals of acquiring both sufficient sleep and a stable diurnal

routine" (Monk 1991: 39). Such phase difference problems can be compounded by constantly changing between different shifts, and thus changing sleep times which mean that the body cannot adapt to new circadian patterns (see Dunlap, et al. 2004). Thus, chronobiology acknowledges that social influences have important roles both in maintaining circadian rhythms in normal circumstances, and through creating needs for people to undertake paid employment at night. Indeed, according to the authors of a key textbook in the field, the impacts of circadian rhythms and their study are "...evident at the molecular, cellular, organismal, behavioral, and societal levels" (Dunlap, et al. 2004:xvii). However, due to the methods and epistemological framework of Chronobiology, there appears to be limited understanding of the complexities of social contexts and social consequences of night work.

2.2.2 Health risks

A large body of research, often using longitudinal research designs or secondary analysis of large population-based datasets, documents physiological effects of different shift work schedules on individual workers in several occupations. This suggests night work can profoundly disrupt the body's circadian system and sleep, provoking severe sleepiness (Akerstedt 1988; 2006) and resulting in significant negative health consequences (Costa 1996), particularly in the long term. Indeed, Rajaratnam and Arendt (2001), reviewing several studies concerning "Health in a 24-hr society", note night work's association with digestive and cardiovascular disease, and significantly increased accident risks. There is also a consensus within shift work literature that rotating shifts worked by nurses result in more negative psychological and physiological consequences when compared with nurses on permanent night shifts, and especially for nurses aged over 40 (Muecke 2005).

2.2.2.1 Health risks for women

In the past, legal restrictions in several countries prevented women from doing night work (Wedderburn 2000:23-24). These restrictions were enshrined in the International Labour Organization's first conference in 1919. It is contended that these restrictions were designed to protect "health and morality" of women manual workers only – both due to physical impacts of night work and because of likely impacts on women's families through their absence at work (see Mager Stellman 1998:24.7). The health risks of shift work for women are considered to be more adverse than for men (see Costa 2004; Spannhake and Elsner

2000). This is because women report more sleep problems than men (see Dzaja, et al. 2005), because women are considered also to have higher prevalence of sleep problems and also because of impacts on hormonal and reproductive systems (see Costa 1996). Indeed associations with increased risk of menstrual and reproductive problems and risks for women doing shift work have been reported (Andersen 2005; Harrington 2001; Labyak, et al. 2002). Other reviews indicate associations between night work and women's risk of developing breast cancer (see Blask, et al. 2005; Schernhammer, et al. 2006). Additionally, a five year follow up on women working rotating shifts including night work over long periods indicates increased risk of metabolic syndrome compared with day workers (Lin, et al. 2009). Some reviews also acknowledge that women's domestic responsibilities alongside increased risks to their health increase the burden of night work upon women although the lack of data cited suggests this may be largely based on assumed knowledge (for example, Costa 2004; Härmä 1993). Major research projects on sleep and shift work have only recently begun to consider gender differences between men and women (see Dzaja, et al. 2005) so understanding of these differences is not well developed and gendered patterns in sleep and shift work are even less well understood.

2.2.2.2 Least harmful ways of doing shift work

Given these health risks and suggestions about negative social and psychological consequences, there has been considerable investigation and discussion concerning the least harmful ways of doing night work. Much of this research and debate considers which shift work patterns are physiologically optimal (see Barton 1994; Murray, et al. 2005). Such debates are complex, as there are "thousands of different shift systems" in operation (Costa 2003:84), with different permutations emanating from varying length, start and end times, number of consecutive shifts, the combination of night, evening and day shifts and whether shift schedules rotate clockwise or forward (early shifts followed by late shifts followed by night shifts followed by time off) or counterclockwise or backwards (night shifts followed by late shifts followed by early shifts).

Additionally, a wide range of different risk factors, indicators and priorities can be considered (Costa 2004:88). Some of this research concerning optimal shift scheduling acknowledges social influences and consequences. However, it appears that it is rare to take into account employees' social circumstances and likely social influences and consequences in planning

optimal shift schedules. The indicators, methods and conceptual frameworks employed for considering social influences and consequences of night work are now reviewed.

2.3 SOCIAL INFLUENCES AND CONSEQUENCES OF SHIFT WORK WITHIN PHYSIOLOGICAL, ERGONOMIC AND OCCUPATIONAL HEALTH RESEARCH

Research concerning optimal shift scheduling and night work safety is physiologically focused but nonetheless indicates that the effects of any particular shift schedule may be affected by the social circumstances of employees including likely social influences and consequences. This section reviews the criteria used in judging optimal shift scheduling and also how social influences and consequences of night work are acknowledged within the fields of physiological, ergonomic and occupational health research.

2.3.1 Social influences within optimal shift patterns

Shift schedules incorporating several consecutive night shifts with daytime sleep afterwards are theoretically preferable to constantly rotating or changing shifts, as the former allows some adaptation to new daily patterns (Dement and Vaughan 2000:391). Rotating shifts are considered to be worse for employees' sense of reward in esteem and career and also "work ability" (Camerino, et al. 2008). Additionally, forward or clockwise rotation of shifts (e.g. early shifts, late shifts, night shifts, time off) is considered less harmful because of the greater opportunities for the body's circadian rhythms to adapt than is possible with backwards or anticlockwise rotation (see, for example, Vangelova 2008). However, it is accepted that adaptation is rare as social norms mean night workers usually revert to night-time sleeping during time off (Dement and Vaughan 2000). Indeed, it is noted that people working night shifts on offshore platforms usually adapt more quickly and successfully than do night shift workers who live at home (Akerstedt 2003; Barnes, et al. 1998a; Bjorvatn, et al. 1998; Gibbs, et al. 2002).

2.3.1.1 "Social factors"

While reduced morning light exposure on offshore platforms may play a role, the authors of

studies concerning adaptation to different shift schedules on offshore platforms suggest that "social factors" (Barnes, et al. 1998a) including "virtually no social commitments" (Bjorvatn, et al. 1998) offshore may facilitate this adaptation. This is significant, because it acknowledges that social patterning and responsibilities may play a role in the ability to adapt physiologically to different shift schedules, even though it is not possible to isolate these effects from light exposure.

2.3.1.2 "The social cycle"

"The social cycle" concept discussed by Dijk and von Schantz (2005) as an important secondary factor alongside the light-dark cycle in maintaining circadian rhythms driven by the biological clock and sleep debt also acknowledges social influences on sleep, circadian rhythms and night work. While broad social norms cover times of day and night for working, relaxing and sleeping, "the social cycle" concept implies that every person's waking and sleeping are strictly governed by identical and socially stipulated rules. Use of "the" reinforces this suggestion of there being one pattern for everyone. However, social norms are much more flexible than this, with norms varying according to the social context. For example, an individual's sleeping, waking and daily routines are likely to arise from direct or subconscious negotiation between their social roles, responsibilities, relationships and personal choices at home and at work, as well as their physiological characteristics (Meadows 2005). Accordingly, it seems social influences on sleeping and waking patterns and daily routines are likely to reflect individuals' structural position within society, features of their household and work, and their specific relationships and preferences, as well as more general norms for "the social cycle."

2.3.1.3 Social factors affecting women's night work

It has been contended by a key figure in the field that "Much shift-work research has long suffered from the strong preferences of researchers to remain in the comforts of the laboratory" (Akerstedt 2006:20). The limitations of this context for research include understanding of both physiological and social influences and consequences of night work and how they intersect in lived experiences rather than simulated shift work. Since the publication of Dijk and von Schantz's (2005) paper discussing "the social cycle", Leonhard and Randler (2009) have used the term "social habits" or "lifestyle" to overcome

epistemological constraints of needing to eliminate other factors when using the term *Zeitgeber* (p.512). The work of Leonhard and Randler (2009), Tounai and Tounai (2004) and also Rotenberg and colleagues (2000; 2001; 1999) has begun to focus on the sleep of women, taking into account their social context including whether they have (younger) children. This indicates that morningness is predicted among women with children, with rise time being 90 minutes earlier at weekends when comparing women with children (who were not pregnant) to women without children. Additionally, bed times during the week are later for women with children than women without children, suggesting that those with children have shorter sleep duration. Indeed, Leonard and Randler (2009) conclude with the suggestion that "...children have a strong influence on their mother's lifestyle and sleep-wake rhythm, far beyond the first months of life, and that children are a more important social factor than the male partner" (Leonhard and Randler 2009). Tounai and Tounai (2004) have found significant differences in sleep duration and time spent on housework between women working as nurses with children and those without children. Women with pre-school children had the shortest sleep duration and greatest amount of time spent on housework, women with school age children had slightly longer sleep duration and slightly less time spent on housework, while childless women had much longer sleep duration and much shorter housework time. The work of Rotenberg and colleagues on men and women working fixed night shifts in industrial settings considers gendered differences between men's and women's experiences of night work. It indicates that due to lack of domestic responsibilities, men usually have opportunities to sleep for longer during the day and also to choose the timing of their day sleep (Rotenberg, et al. 2001; 1999). By contrast, women with children are more likely than those without children to have difficulty initiating day sleep and to have more day sleep episodes, with the first one being shorter (Rotenberg, et al. 2000). This work also indicates that women's sleep is often interrupted by the need to prepare lunch for their children and transport their children to and from school (Rotenberg, et al. 2001).

2.3.2 "Tolerance", choice, norms and structural constraints

2.3.2.1 "Tolerance" of night work

"Tolerance" of night work is a term reflecting features of individuals' physiology and personality, and also their use of coping mechanisms and their "commitment" to sleep, eating and other behaviours identified as optimal for people working that shift pattern (Boivin and James 2002; Dumont, et al. 2001; Härmä 1993; Humm 1996; Kaliterna, et al. 1993;

Nachreiner 1998). "Tolerance" is considered an important concept as it may indicate how people are affected by shift work, and whether they are able to continue working shifts. Indeed, the high rate of people ceasing shift work soon after beginning, leaving a self-selecting "survivor" group is considered a particular difficulty for accurately researching shift work and its effects (Harrington 2001).

2.3.2.2 "Choice," "commitment" and night work

Attention has been drawn both to the importance of employee choice to work at night in affecting levels of "tolerance" (Barton 1994; Barton, et al. 1993; Humm 1996), and to the ways in which social circumstances, including household situation, may influence the effects of night work (Gadbois 1981; Madide 2003; Monk and Folkard 1985; Nachreiner 1998; Nilsson 1981; Taylor 1978). However, it seems that the influence of such social structural characteristics upon choices, "commitment" to and "tolerance" of night work may not have been considered in sufficient detail. For example, women night workers taking children to school between the night shift and day-time sleep has been identified as a factor inhibiting light restriction and promoting further phase delay (Revell and Eastman 2005), which shift workers appear not to "realize" (pp.360-361). Additionally, Monk and Folkard (1985), while acknowledging that responsibilities for childcare and housework may impede women's ability to "commit" to shiftwork, refer to such factors as "individual differences." This appears not to consider normative expectations and the prevalence of these gendered patterns. Indeed, as Nachreiner (1998) forcefully contends, it appears these concepts of "tolerance" and "commitment" are too narrowly physiological:

> *"Shiftwork tolerance, as the term is used today, is clearly an ill-defined concept that shows a biologically restricted perspective of "tolerance." It obscures relations between the biological and social aspects of shift work - and their possible interactions. This concept should thus be either clearly and adequately defined for future use or abandoned."*
>
> (Nachreiner 1998:39)

Indeed, while "tolerance" is often treated as an immutable given, a person's adaptation to shift work may be significantly affected by changing personal circumstances including partners' and children's schedules, and the extent to which these factors may vary according

to gender. For example, Hislop and Arber (2003b; 2003c; 2003d) indicate that women's sleep is very much subject to gendered patterns varying across the lifecourse and including carer roles for partners, children and parents.

Nachreiner's (1998) contention appears to resonate with a similar debate in the social sciences. Hakim (1995; 1996; 2005) contends that women "choose" either a "marriage career" or an "employment career", and that their "career" preferences affect their "commitment" to paid employment. Specifically, she suggests that part time employees are less committed to their work than full time employees. Hakim has been severely criticised (for example, Bruegel 1996; Ginn, et al. 1996) for these contentions, which, it is argued, fail to balance women's agency with structural constraints in women's lives, including the normative gendered domestic division of labour.

In considering experiences of night work for partnered mothers, it seems that the concepts of "choices", "commitment" and motivation associated with "tolerance" to night work within existing shift work literature need to be considered in relation to debates about gendered expectations of contemporary women. In particular, it seems important to consider how women regard normative expectations of them as wives and mothers in the context of their night work. How do women feel about these expectations? To what extent do these expectations and their fulfillment form part of women's gendered identities as wives and mothers? How are household tasks and childcare organized during night work and who takes responsibility for this?

Recent studies provide some data about the important influences of social contexts and specifically gendered expectations of women upon experiences and consequences of night work. However, there appears limited concern to investigate further how these social contexts affect adaptation to night work, and how these may play out with differences in social circumstances, occupation, shift scheduling and if any techniques are applied to try to minimise negative effects of night work. A review by Boivin and colleagues (2007) concerning "atypical schedules" identifies several studies indicating that "individual and social determinants" are poor predictors of shift work outcomes. This may partly explain the lack of attention given to social factors as a component of how well people cope with shift work. However, it also raises questions about why further efforts have not been applied to further understand social circumstances and their influences upon the ways in which shift work is experienced.

2.3.3 Social consequences of night work within physiologically focused literature

2.3.3.1 *Negative social consequences of night work without empirical evidence?*

Physiological, ergonomic and occupational health research indicates that working at night may create negative social consequences. For example, Folkard and Tucker (2003:99) suggest that working at night may cause "a disturbed social life", which in turn may contribute to reductions in employees' performance and safety while working at night. Additionally, Barak and colleagues (1996: 528), indicate research demonstrating an association between shift work and increased risk of divorce, within a list of biomedical indicators of shift work's negative consequences. However, neither paper provides further detail on these social outcomes or their intersection with physiological factors in the context of night work.

It seems similar critiques may be applied to other physiologically-focused studies in relation to night work's social outcomes. For example, Wilson (2002:216) claims "several studies" demonstrate shift workers feeling "isolated from family and friends and less able to fulfil their domestic roles" but does not cite these studies. Burch and colleagues (2009), in a review of shift work impacts and adaptation among health care workers mentions effects on "social life" and "domestic activities" but does not include anything concerning social or domestic life in his recommendations about healthy living. Simon (1990), in a review of "Impact of Shift Work On Individuals and Families" includes many uncited suggestions about significant social problems arising from shift work, including noise disturbing night workers' daytime sleep and limited time with friends. These are not insignificant claims. For example, in a review of shift work research, following a short discussion of social relationships, Giovanni Costa (2003: 85), a key figure within the field of shift work research, concludes: "Such work/non-work complaints are often more frequent than those related to the biological problems, are also often the main cause of maladaptation to shift work and may have a clear influence on the development of psychosomatic disorders." Give their ontological focus on biology and both methodological and epistemological limitations within the field, it is perhaps unsurprising that biological scientists have not focused on social influences and consequences of night work. However, it is curious that these suggestions about potentially

serious social consequences of night work appear not to have been investigated fully within occupational health, ergonomics or social scientific research.

2.3.3.2 Guidance for night workers

There have been some attempts to moderate social influences and outcomes associated with night work. For example, some night workers are given advice on how to cope with their work schedules which includes suggestions to be aware of the potential for social and domestic problems and to promote communication with family members (Monk 2000; Monk and Folkard 1992). However, such advice may be limited in scope and not widely communicated. Indeed, despite an extensive literature review, analysis of professional journals and interviews with nurses and their families and informal discussions with many more health professionals, this author has found no evidence of formal training or induction of nurses or any other health professionals to prepare them for night work, beyond a few short articles giving tips (Coburn and Sirois 2000; Davis 2002; Heacock 2009; HSE 2008; Turner, et al. 2005). One example is printed below:

"Secrets of Successful Night Nursing"

- Avoid using caffeine
- Eat at regular intervals
- Eat your main meal in daytime (6pm ideal)
- Take regular exercise
- Rotate shifts forwards
- Experiment with sleep routines
- Make time to relax before sleep
- Use off duty time to rest not bank shifts
- Make quality time

(Davis 2002:24)

While this guidance incorporates many of the general principles of healthy living and is also designed to reduce risks identified as associated with night work, it appears to speak to the shift worker as an individual and does not acknowledge that they may need to manage their night work alongside other responsibilities and constraints. In particular, such guidance seems focused on the individual night worker and largely impractical for women with children and managing gendered expectations about their care, wellbeing and other housework and

childcare. For example, taking regular exercise may be very challenging when already very carefully managing the timing of paid employment, childcare and own sleep needs. Rotating shifts forwards is not likely to be within the control of individual nurses as this will depend on shift patterns and staffing needs on the ward and individual requests from themselves and their colleagues to meet commitments outside their paid work. Making time for relaxation, quality time and rest are also likely to be challenging due to expectations around care and housework and time-specific needs of children and partners.

Further, Kerin and Dawson (2004) indicate that out of those employers which provide lifestyle advice and training for night workers, just one in twenty include night workers' families in the training. Additionally, Simon (1990:345) suggests that while shift work may create serious relationship difficulties requiring professional treatment, awareness of this appears low because couples rarely consider shift work the "presenting problem" in relationship difficulties. Exploring further this perception may facilitate further understanding about how shift working patterns may result in relationship difficulties. This limited attention to negative social outcomes seems to perpetuate Mott and colleagues' (1965:4,18) suggestion that while concerns about night work as a "social problem" have been expressed for many centuries, management may ignore such interpersonal problems as there seems little prospect of reducing them. This suggests that fully understanding how night work affects night workers and their families may be resisted because of fear that evidence about night work's consequences might affect the number of people willing to work night shifts. Mott and colleagues (1965: 4) report that European guilds have records originating from the thirteenth century which indicate "an organized concern" about night work and in particular its effect on employees' work efficiency, with rope makers feeling that concerns were on a sufficient scale that night work should be banned. While the tasks completed on night shifts and the emphasis placed on different aspects of night work's impacts may have changed, it is clear that strong concerns about night work have been common for a considerable period amongst those working night shifts.

Physiologically-focused research indicates that night work is required, justified and enabled by social trends in working patterns, social agency in specific shift and sleeping patterns, and that social norms, "the social cycle" and "social habits" may influence individuals' night work, contributing to negative outcomes for their sleep, circadian rhythms and social well-being. However, most literature mentions these social aspects very briefly and with reference only to suggestions and anecdotes, and other research consults only the night

worker themselves through closed question surveys. Despite this, literature implies that social processes associated with night work and their intersection with physiological processes have been extensively investigated and thoroughly understood. Indeed, it is contended that "The effects of shift work on workers, their families, communities and organizations have been well-documented..." (Baker, et al. 2004:307-308) and that "There are extensive publications of the health and social effects of shift work" (Harrington 2001:69). From a sociological viewpoint, it seems such claims may reflect Harrington's own concern regarding shift work research that "The quality of the papers does not always match the quantity" (p.69). Indeed, the absence of detailed empirical evidence, systematic discussion or critical analysis of the considerable ways that social interaction and processes may influence night work and promote negative social outcomes while intersecting with physiological processes and outcomes appears curious. This is despite frequent acknowledgements of important social influences and negative social outcomes of night work, together with several early publications' identification of the interdependence of social, psychological and physiological facets of night work (see ILO 1978; Mott, et al. 1965; Reinberg, et al. 1981; Wedderburn 1967) and Monk and Folkard's more recent emphasis that such "multifaceted problems require multifaceted solutions" (1992:52).

2.4 SOCIAL RESEARCH CONCERNING SHIFT WORK

2.4.1 Limitations of current understanding of night work's social influences

It appears that while concerns about negative social effects of night work have existed for considerable periods, these have attracted much less sociological attention than might have been expected. Accordingly, little detail is known about social processes within the lived experiences of employees working at night, their partners and children, and there has been limited discussion and conceptual consideration of night work and its social contexts.

Most knowledge concerning night work's social influences and consequences is derived from quantitative data only, and much of it must be extrapolated from research concerning shift work in general. Further, much of this research is from ergonomic and occupational health fields, and is now several decades old (for example, ILO 1978; Mott, et al. 1965; Reinberg, et al. 1981). Indeed, the field today continues largely to concur with Harriet

Presser's (1988:134) statement over 20 years ago that social scientific research about shift work is generally limited to national-level data covering the whole population or "specific industrial sectors" or to small, geographically specific studies concerning men working in manufacturing. Therefore, it does not reflect current social expectations and working patterns. Indeed, even a relatively recent publication by Presser (2000) is based upon United States survey data collected in 1987/1988 and 1992-1994.

A review and critique of the insights concerning night work attainable from existing social research concerning shift work follows.

2.4.2 Social routine disruption

Small scale surveys of shift workers in many western countries indicate that their absence from home by being at work during evenings can promote social difficulties as shared meals may be missed, household routines may be disrupted, less time can be spent with other friends and family, and there may be problems arranging childcare (Beveridge 1978; Brown 1975; Colligan and Rosa 1990; Gadbois 1981; Kundi, et al. 1981; Mott, et al. 1965; Nilsson 1981; Portela, et al. 2005; Sloan 1978; Taylor 1978; Wedderburn 2000). These findings are corroborated by time value surveys indicating that both shift workers and day workers express similar preferences to work during weekdays and have social time during evenings and weekends (Baker, et al. 2003a; Baker, et al. 2003b; Wedderburn 1981). Further corroboration is provided by surveys reporting that social support from family members and co-workers is very important in helping shift workers to cope with their working patterns (Bohle and Tilley 1993; Pisarki, et al. 1998). However, it is unclear precisely how social support may render shift work less arduous for the shift worker (Pisarki, et al. 1998). It is also unclear when this social support is most beneficial and whether there is sufficient shared free time to achieve this in the context of shift work and other paid and unpaid work within the household.

Thus, there is evidence from small survey-based research which indicates that shift work may provoke social difficulties because usual routines are broken and there may be limited time available to spend with friends and family. The focus of these studies is an established routine within couples and families which is then disrupted and is problematic because of this disruption. This mirrors the conceptual framework of physiological circadian rhythms in

which there is an established daily rhythm which is disrupted when different sleep and work timing affect social and light cues and sleep debt, provoking further difficulties in attaining sleep. However, in family contexts, changes to an individual's usual sleep and work patterns are also likely to have effects for other family members. These effects on others are likely to be particularly important where the person working night shifts is a wife or mother following normative expectations about women's gendered responsibilities for organizing family activities and the wellbeing of all family members.

2.4.3 Normative gendered social roles

Some of the literature develops these findings concerning night work's disruption and negative social consequences, and suggests that night work may inhibit performance of normative social roles. However, these studies suggest assumptions that people working at night are usually men living with a home-based female partner and children, in the context of a particular set of gendered norms concerning roles and relationships within the household. For example, Kundi and colleagues (1981) indicate a loss of authority for the absent (male) shift worker. Mott and colleagues (1965) report a loss of protective roles for shift working husbands and fathers in the United States, with "conflict-pressure" resulting in lowered self-esteem and increased anxiety. Brown (1975) provides more detailed analysis of the ways men working shifts may experience changes in value about their roles at work and beyond work, which may inhibit their social involvement and relationships with family and friends.

A few more recent studies have gone beyond this focus on male breadwinner shift workers, and have considered how partners and children may experience shift work, and the negotiation of gendered expectations where women do shift work.

The few studies which consider women's experiences of night work clearly indicate continuing gendered normative assumptions about women's work and home lives. Research in France, New Zealand and South Africa reports that women and especially mothers face particular role problems when undertaking night work, as the gendered division of labour often entails women having greater responsibility than men for childcare and housework, and therefore childcare and housework encroach upon or eliminate opportunities for daytime sleep following night shifts (Gadbois 1981; Lushington, et al. 1997; Madide 2003). Indeed, an in-depth study with female nurses in the United States (Garey 1995)

indicates that many female nurses choose to work full-time at night as they feel this allows them to be employed, while simultaneously constructing themselves as "good mothers" like "stay-at-home moms", by sacrificing daytime sleep to fulfil expected domestic duties and being available to their children during daytime. Despite a somewhat positive outlook on night work by some women, these studies suggest women's night work can involve considerable pressure on the women and limited opportunities for sleep (Gadbois 1981; Lushington, et al. 1997; Madide 2003). Additionally, Lushington and colleagues' (1997) survey of female nurses and their male partners in New Zealand indicates many similarities with previous studies of men's shift work, such as dissatisfaction with shifts and especially night work, including its unpredictability, disruption to couple relationships and as a cause of family conflict.

Rotenberg and colleagues' (2000) research indicates mothers doing night work may have more disrupted and worse quality sleep than women without children doing night work, those with children may be older than those without children, and many of the women with children may be married. This suggests that women's age, stage of the lifecourse and whether women live with a partner may all have important effects on domestic responsibilities and sleep. The responsibilities which women assume and the effects which these exert on their sleep may be affected by the age and number of children, any parents or parents-in-law for whom they have care responsibilities and circumstances of their own paid employment.

2.4.4 Children's wellbeing

Several studies have indicated that women working at night find this work pattern easier for managing childcare and housework responsibilities and in particular maximizing familial childcare. However, the handful of studies considering this topic suggest that parental shift work may have negative consequences for children and especially young children.

Barton and colleagues' (1998) survey of 8-11 year old children with shift working fathers indicates that stress within the family as a result of shift work may result in emotional difficulties for children. The survey reports girls with poor perception of their ability and competence at school and boys with more depressive symptoms and low self esteem.

In analysis of large scale cross-sectional survey data of families with children aged 2-11

years, Strazdins and colleagues (2006; 2004) found that where parents were working nonstandard schedules, there were higher odds ratios of emotional or behavioural difficulties. The higher risk of difficulties, worse family functioning and hostile and ineffective discipline between parents and children applied when the father, the mother or two parents had nonstandard work. These differences persisted when controlling for socioeconomic status.

Analysis by Han (2005; 2008) of large scale survey data indicates higher risk of negative impacts of maternal shift work on children. For children under 3 years, risk of poor cognitive development appears to be higher and especially where shift work is initiated when the child is younger than 12 months old, but this may be affected by childcare provision (Han 2005). For children aged 4-10 years, analysis suggests higher risk of behavioural problems, especially where mothers are single parents, in lower socioeconomic groups, are doing permanent night work or are in service occupations (Han 2008).

In a survey of female nurses and their partners, Lushington and colleagues (1997) reported half of partners and 44% of nurses feeling that the shift work was harmful to their children.

Findings from what seems to be the only published qualitative study consulting both shift workers and their partners indicate how participants feel their social roles can be disrupted through night work, and demonstrates the potential of qualitative sociological research for furthering understanding of "shift work affect[ing] family life in complex and subtle ways" (Hertz and Charlton 1989:504). In-depth interviews with forty-four male United States air force security guards working on rotating shift schedules and their wives indicate how roles and relationships between fathers and children may be particularly affected. Some children regard their fathers as absent at work during daytime sleep following a night shift, children's routines are often adjusted to accommodate fathers' work schedules, with meals often being delayed until fathers wake, or meals in fathers' absence at work in the evening being "less elaborate" than in his presence (Hertz and Charlton 1989:494,495).

The small amount of research which has been conducted concerning influences of night work upon employees' children suggests higher risk of negative emotional, cognitive and behavioural outcomes. However, these studies have primarily focused on younger children, have not consulted children directly and do not usually distinguish between rotating shifts

and permanent night work, and some do not distinguish between night work and other nonstandard work (for example, evenings, early mornings, weekends).

2.4.5 Couple relationships

A small amount of research has considered impacts of night work upon couple relationships, with primarily negative conclusions.

A rare survey consults women whose male partners work shifts (Smith and Folkard 1993). This indicates that shift workers' fatigue, irritability and the lack of support, companionship and opportunities for sexual activity had important negative consequences for partners, of whom 67.6% indicated that shift work caused moderate to high disruption, and 32.6% indicated that they had tried to persuade their partners to stop working shifts.

A similar survey of primarily female nurses working rotating shifts and their partners reveals similar patterns: 64.5% of shift workers and 56% of partners felt shift work "affected their intimate personal relationship from "some extent" to "a great deal" " with 64.4% of the nurses feeling their working pattern interfered with their social life with partners (Newey and Hood 2004:190). In relation to the night shift, the shift working nurses rated "social/family issues as more problematic than their partners' perceptions of the shift workers' experiences" (p.191). Additionally, "social measures" (particular disruption for the shift worker's partner) were more important than disturbance to "biological measures" including sleep, fatigue, stress and health for predicting shift workers' sense of disruption (p.192).

Secondary analysis of large datasets from the United States corroborates pressures, role conflicts and other difficulties associated with shift work, by indicating that negative social consequences may result in negative effects on marriage. Davis and colleagues' (2008) analysis of a national survey of 1,166 employed married adults indicated night work associated with greater marital instability. White and Keith (1990), analysing data from 1,668 men and women interviewed in both 1980 and 1983 (82% of 1980 participants) on six measures of marital quality and the probability of divorce found "a modest but very general negative effect on marital quality" from shift work, with shift work increasing the probability of divorce from 7% with day work to 11% with shift work.

Presser's analysis (2000) of data from 3476 United States married couples interviewed in two waves in 1987/1988 and 1992-1994 (77% re-interviewed), supports both White and Keith's analysis (1990) and suggestions from smaller surveys conducted in France, South Africa and the United Kingdom that social disruption from shift work may differ between employees with different living arrangements, responsibilities and relationships beyond work (Gadbois 1981:493; Madide 2003:72,73; Taylor 1978:68). Presser's analysis indicates that shift work effects vary significantly according to the shift worker's gender, length of marriage and whether there were children: a man working fixed night shifts with children and less than five years of marriage was 6.45 times more likely to separate or divorce by the second wave than if he had been working days; while for women working permanent nights who had been in their marriage over five years, the odds of "marital disruption" compared with day work were 3.04 times higher. Rotating shift work by mothers married more than five years doubled the odds of "marriage disruption". Presser's analyses clearly indicate that having children increased the odds of marital instability, and suggest that shift work is not more likely to be undertaken by those with antecedent relationship difficulties. However, that such strong associations for certain shift work schedules and marital disruption only apply to people with specific social circumstances, suggests the effects of shift work on relationships are very complex and require detailed qualitative investigation to provide further understanding. Indeed, Presser (2004) indicates that good and bad aspects of shift work may affect different families very differently. Presser (2005) has also called for the complexities of shift work to be fully embraced if understanding is to be furthered beyond the existing simple, discrete research approaches which are often so much more attractive:

> "Yet acknowledging complexity is often antithetical to how we generally approach research and policy issues. There is elegance in analytical simplicity; moreover, the lack of data often forces us to research just a few aspects of a highly complex issue. In the policy arena, people often want short, bulleted suggestions on how to improve the situation at home or at the workplace without taking the complexities into account." (Presser 2005:43)

This contention about the importance of more fully understanding the complexities of shift work and the ways in which it "...affects family life in complex and subtle ways" (Hertz and Charlton 1989:504) is supported by the conclusions of individual studies and by reviews.

2.4.6 Conclusions – Social research concerning shift work

Social research indicates that absence from home through shift work may result in disruption to couple and family routines, roles and relationships, and that it may increase the risk of emotional, behavioural and cognitive difficulties for children and also couple relationship breakdown. Additionally, it seems that the extent of disruption may vary considerably according to the shift worker's gender, social and household circumstances. These indications may provide useful starting points for more detailed investigation and discussion of social influences and consequences associated with night work. However, it is important to consider that the majority of these studies concern shift work in general rather than night work specifically, and yet this research suggests night work may cause the most serious disruption. Additionally, the majority of these studies involve small scale surveys consulting only male shift workers outside the United Kingdom, without considering how gendered patterns and normative expectations of men and women may intersect with night work.

The majority of this research, with its survey-based and quantitative data focus, also appears to draw directly on the conceptual framework of circadian rhythms, as in Chronobiology. This suggests one social routine which is established across all couples and families. This research also suggests that shift work disrupts this routine with consequences both for the individual concerned and for their family, with negative consequences for relationships and wellbeing. However, these surveys provide limited understanding of the social processes, management strategies and lived experiences associated with night work.

2.5 SOCIOLOGY OF SLEEP

The importance accorded to changes in sleep patterns due to night work within physiologically focused literature indicates that sleep and its disruption are key to understanding night work and its effects. While sleep has been accorded little sociological attention in the past, the sociological significance of sleep and its organisation has been emphasised recently (see Baxter and Kroll-Smith 2005; see Dzaja, et al. 2005; Hislop and Arber 2003c; Meadows 2005; Steger and Brunt 2003; Williams and Crossley 2008; Williams 2005).

Night work demonstrates that sleep, while a biological necessity, is vulnerable to "socio-

cultural pliability" (Williams 2003:115) in its timing and organization. Thus, taking account of night workers' "anomic sleep role" (Schwartz 1970:491), which challenges the "formidable social barrier" (Aubert and White 1959:52) of coordinated night time sleep (Schwartz 1970:487-488) is key to developing understanding of the social influences of night work. Despite the focus on social influences and contexts, understanding of lived experiences of night work needs to take account of the embodied nature of sleep (see Meadows 2005), and avoid any suggestion of conceptually regarding sleep as an "infinitely malleable phenomenon which simply reflects social and cultural forces" (see Shilling 2005:762).

The work of Meadows (2005) and Hislop and Arber (2003b; 2003c; 2003d) suggests conceptual pathways for taking account of sleep as both physiological and socially located. Meadows (2005) discusses sleep as the result of negotiation with oneself, bed partners and other family members and between physiological needs, rights, roles and responsibilities. Hislop and Arber's study using focus groups and audio sleep diaries to focus on mid-life women's sleep provides a "window" (Hislop and Arber 2003a) onto how gender is "done" within relationships with partner and children. This emphasizes the pervasiveness of gendered expectations on women, including the significance of sleeping together in a double bed as a symbol of the couple relationship and how the bedroom becomes an "invisible workplace" in which women put their partners' and children's needs above their own sleep needs for "care" carried out by women (Hislop and Arber 2003c). This is supported by Venn and colleagues' investigation of couples' sleep (2008) which indicates a fulfilled and un-negotiated expectation that both physical and emotional care of children during the night is provided by mothers rather than fathers, even when mothers are in full time paid employment. This suggests that gendered expectations about care and wellbeing of children and also responsibility for housework may have particular consequences for women working night shifts, perhaps because of reduced opportunities for sleep during day times which may relate to school delivery and collection.

2.6 CONCLUSIONS – NIGHT WORK IN SOCIAL CONTEXTS: LIMITATIONS OF CURRENT KNOWLEDGE

In contrast with the large body of research which provides detailed understanding of the ways in which night work affects the body, circadian system and sleep, comparatively little is

known about how night work influences social life and how experiences of night work are affected by social circumstances and expectations.

Alongside a general sense that night work has negative social consequences, existing literature drawing on surveys and secondary analysis of large datasets indicates that night work can disrupt usual social routines and expectations, increasing the risk of social difficulties within families, including problems for children's development and couples' relationships. This work primarily draws on the model of the circadian system to describe usual social routines and how night work provokes disruption of these social routines, resulting in negative impacts for social life. However, this deductive survey-based data provides limited detail concerning the social processes and experiences associated with night work. In particular, there has been limited consideration of normative gendered expectations in relation to experiences of night work and it is very rare to consider the perspectives of night workers' partners and children.

Given the very serious negative outcomes of night work indicated by physiological, ergonomic and occupational health research, it is curious that little sociological attention has been afforded to night work specifically, rather than shift work in general. In particular, it seems understanding of night work could be enhanced by going beyond the conceptual focus on impacts and the circadian system model of disruption to draw on literature concerning gender and family lives and employing qualitative methods to provide detailed insights about how night work is experienced, organised and has meaning on a daily and nightly basis by night workers and their families.

The following chapter discusses in further detail the literature concerning families, work and gendered expectations concerning childcare and housework as a context for furthering understanding of the influences of night work.

Chapter 3 – Night work within gendered and family contexts

3.1 INTRODUCTION

This chapter reviews key sociological literature concerning families and paid employment and the influence of normative gendered ideology concerning women's responsibility for housework, childcare, caring, and organisation of family lives. In contrast with the simplistic conceptual focus on individuals and "impacts" of shift work disrupting particular routines discussed in Chapter 2, this chapter is concerned with relationships within families; interfaces between leisure time, paid employment and unpaid work; and how gendered social structures influence these relationships. This chapter, then, provides an overview of social contexts likely to be pertinent in developing further understanding about lived experiences and influences of women's night work. Discussion covers the evolution of conceptual frameworks used to further understanding of families and relationships between home and work lives, including the contemporary focus on families as having meaning as integrated units through relationships within them. Additionally, discussion covers empirical knowledge concerning organisation of contemporary family lives and paid employment, the extent of gendered patterning for responsibilities within families, and the meanings which these experiences have for children, men and women.

The chapter opens by discussing conceptualisations of work-family interfaces and gendered division of domestic labour. Experiences of women's paid employment in the context of gendered expectations about responsibilities in relation to "mothering" and housework are then introduced, before more detailed discussion about consequences for gendered identities. This includes discussion of "tolerance" and "choice" which were identified in Chapter 2 as requiring more detailed consideration with reference to sociological knowledge. Literature concerning fathers' paid employment and responsibilities within families are considered and then understandings of children's experiences in relation to their mothers' paid employment. How family lives are organised in temporal terms is then considered; before discussion concerning the potential to develop more detailed understanding about how night work is experienced by women and their families by moving conceptually beyond the focus on night work being negative.

3.2 WORK AND FAMILIES

The chapter opens with discussion of the ways in which relationships between work and families are conceptualised, including the "two spheres" approach, the approach which focuses on spillover and conflict, and approaches which seek integrated understanding to reflect the complex relationships involved.

3.2.1 Work and family: "two spheres"

Within the social sciences, there is a considerable body of research focusing on paid employment or the "public sphere", and also a considerable body of research focusing on families or the "private sphere". However, much of this work has traditionally involved studying and conceptualising work and family as segmented, separate spheres (see Ferree 1990; Fletcher 2005; Grosswald 2004; see Morgan 1996; Smart and Neale 1999). Within this approach, paid employment and family life are considered to be independent areas of life. Paid employment may be characterised as rational and "male" in focus, whereas family life may be characterised as emotional, nurturing and "feminine" in focus (see Halford 2006:385). However, this differentiated approach to studying work and families may have reified this separation and prevented understanding of intersections between paid work and family lives to develop. Additionally, this segmented approach appears to have promoted a focus on dominant forms of paid employment and family life (for example, see Smart 2007:7). This may partly explain the lack of focus within social sciences on influences of night work and lived experiences of this working pattern.

3.2.2 Work-family spillover and conflict

Within psychological research, there has been a focus on understanding work-family interfaces. This research has primarily drawn upon quantitative data from surveys to conceptualise "spillover" and "conflict" between work and family and between family and work. Greenhaus and Beutell's (1985) review indicates that such conflicts may arise in relation to timing, strain or particular "behaviours" in one area being incompatible or inappropriate in the other area. This review also indicates the importance of support from a spouse in managing this interface. Additionally, values of individuals in relation to the centrality, priorities and importance of work and family have been identified as important in

relation to the level of conflict experienced (Carlson and Kacmar 2000). While recognising the ways in which paid employment and family life may have influences upon each other, the language of "spillover" and "conflict" implies a necessarily dichotomous and problematic relationship. It is difficult to see how this approach could acknowledge the potential for positive outcomes at these interfaces between work and family lives. Indeed, this approach appears to have a conceptual parallel with the focus of much previous shift work research on the circadian model of night work as disruptive of usual patterns and therefore predominantly negative.

3.2.3 Integrated understanding of work and family

3.2.3.1 Family contexts

More recent research concerning paid employment and families has sought to recognise interdependence between these areas of life and cross-cutting social structures and themes (Craig 2005; Crouter and McHale 2005; Cunningham-Burley, et al. 2005; Cunningham-Burley, et al. 2006; Duncan, et al. 2003; Ghazi 2003; Hochschild 1996; Pavalko and Gong 2005). This interdependence can be understood as involving permeable interfaces between paid employment and families (see McKie, et al. 2005:8). This is particularly significant for understanding lived experiences and influences of night work for women who live with their husbands and children. Physiologically focused literature concerning night work indicates that the effects of this working pattern on sleep and sleepiness continue beyond the night shift itself, and therefore have influences on time spent at home and with family members. Even at this level, it can be deduced that family circumstances may then have influences on lived experiences of these changes to sleep and sleepiness. When considering the full range of influences of night work upon mood, emotional wellbeing and relationships, it is clear that family contexts will have influences upon experiences of paid employment and vice versa. This interdependence between work and family life is particularly important when considering gendered expectations of women concerning responsibility for housework and children's wellbeing. In this context, home is not merely a 'haven' of leisure (see Lasch 1979) but a site of further and unpaid work and unbounded responsibilities, not limited by employment role or contracted working hours. This gendered division of labour and expectations are discussed in further detail in 3.3.

3.2.3.2 *Families and "family practices"*

There have also been moves to enhance understanding of both paid employment and families by recognising key social structures and diversity, and also ways in which these areas of social life are constructed. For example, the importance of considering gender and relationships when seeking to understand intimacy within couples and families is now recognised (see Ribbens McCarthy, et al. 2002:199). Conceptually, "families" are used to recognise diversity of membership and the ways in which families may be created through living and shared experiences rather than focusing on "the family" in unitary, reified form which may reduce recognition of families to dominant forms only.

Connell (1987:421) draws attention to the deep complexities, interactions and continual development and changes within families:

> "Conservative ideology speaks of the family as the 'foundation of society' and traditional sociology has often seen it as the simplest of institutions, the building-block of more elaborate structures. Far from being the basis of society, the family is one of its most complex products. There is nothing simple about it. The interior of the family is a scene of multilayered relationships folded over on each other like geological strata. In no other institution are relationships so extended in time, so intensive in contact, so dense in their interweaving of economics, emotion, power and resistance." (Connell 1987:121)

Connell thus argues that families themselves are inherently complex. This is even before considering different types of families and how their socioeconomic, geographic and employment circumstances are experienced. However, while Connell explicitly indicates that the family is one of society's most complex "products", this is not in a static sense of outcomes, but understood in the context of a wider theory of practice and consideration of gender as process. Indeed, Connell also regards families as continually "becoming" through continually engaging and "interweaving."

This, together with Morgan's conceptualisation of family being achieved through doing as "family practices" (see Morgan 1996) has contributed to understanding of families as constituted by relationships and through experience and doing rather than as isolated social

institutions or products. This enables understanding to develop concerning the ways in which different aspects of paid employment and family lives may influence each other.

This section has discussed how sociological conceptual understanding of work and family lives has developed from two separate spheres to integrated frameworks which reflect these complex interfaces. The ways in which families are understood as achieved and identified through doing is also discussed.

3.3 GENDERED PATTERNS IN PAID AND UNPAID WORK

3.3.1 Time use and responsibilities for men and women

Despite transitions away from policy models assuming a male breadwinner and full time female carer towards an "adult worker model" (see Duncan, et al. 2003) with "family friendly" working options and equal opportunities policies, many gendered assumptions concerning work persist in contemporary society (see Cunningham-Burley, et al. 2006). Indeed, a common pattern is for women to have part time paid employment to enable them to fulfil gendered expectations to be their children's primary carer and to take responsibility for household management. This is supported by 2008 Labour Force Survey data which indicates that 38% of women with dependent children are in part time employment compared with 22% of women without dependent children, and just 4% of men with dependent children and 7% of men without dependent children (ONS 2008).

Although many men assist with housework and childcare (see Dex 2003), study after study concludes that women perform more housework and childcare than men, and almost always retain primary responsibility for housework and childcare. For example, UK 2005 Time Use Survey results indicate women in the sample spend on average double the amount of time on childcare compared with men; and also that a higher proportion of women than men undertake childcare. In addition to childcare, the survey indicates women on average spend three hours daily on housework, whereas men spend one hour and forty-one minutes with 92% of women doing some housework every day compared with 72% of men (Lader, et al. 2006). Although some men become full time carers, such role reversal is very rare (Hardill, et al. 1997). Further, the majority of households are now dual-earners, with both men and women in paid employment. Accordingly, women's continued responsibility for housework

and childcare leaves them a substantial "second shift" (Hochschild and Machung 2003) of unpaid housework in addition to paid work. Indeed, even where women are main earners or equal earners with their male partners, equal responsibility for housework is rare (Warren 2002). Gregson and Lowe (1993)'s study of the division of domestic labour in dual career households indicates that even where both partners are in full time professional or managerial employment, there can be considerable variation in how housework and childcare is undertaken, and by whom. Indeed, they conclude that women's employment patterns themselves do not necessarily have significant impacts on the gendered division of labour, and where changes from the traditional gendered inequity occur for those in their study, this is through negotiation stemming from the partners' gendered identities which do not conform with normative gendered assumptions.

3.3.2 Responsibilities of mothers and fathers

When couples become parents, inequalities between men and women concerning unpaid work appear to deepen. Doucet (2006) comments that despite considerable change in both mothering and fathering practices over the last fifty years and women increasingly doing paid work and sometimes becoming primary breadwinners, "there remains an outstanding stability in mothers' *responsibility* for children and for domestic and community life", with men retaining "a secondary role in caregiving" (p.6). Indeed, Craig and Bittman (2005)'s analysis of Australian time use data indicates that a first child adds 3.5 hours to a woman's daily workload and just one hour to a man's. Further analysis of these data indicates that compared to fathers, mothers spend more time alone with their children, undertake more tasks at the same time, do more physical tasks, have less flexibility in the timing of these tasks and "more overall responsibility for managing care" (Craig 2006). The gendered patterning of these responsibilities appears to have consequences for the whole structure of women's lives: for example, Bittman and Wacjman (2000) indicate that women's, and especially mothers' leisure time is often much more harried and fragmented than the leisure time of men or non-mothers.

This emphasis on mothers as primary care providers is further exemplified by two papers. Firstly, a study with women teleworking from home which indicates time "saved" through not commuting being used instead for providing care, housework or paid employment rather than as leisure time (Hilbrecht, et al. 2008). Secondly, Maume's (2008) analysis of national survey data from dual earner couples indicates that women are more likely than men to

adjust their work to take account of urgent childcare needs. Warren (2003) likewise indicates that even couples sharing domestic responsibilities prior to parenthood often develop inequity once a child is born. Accordingly, it seems childcare and child-related housework including cooking, laundry and washing the child may often become the woman's responsibility, even where the couple's housework had been equally shared previously. Such contentions are supported by several studies which indicate that when men spend time with their children, this often involves play and symbolic tasks such as putting the child to bed rather than personal care of the child (Bateman 2006; Burghes, et al. 1997:55; Oakley 1974b:179-80; Yeung, et al. 2001).

3.3.3 Gendered division of emotional labour

Research concerning the emotions suggests that women take primary responsibility for "emotion work" within families. This includes women providing care for the emotional wellbeing of their children and husbands, which, together with the continuing need to provide other types of care, can result in women doing considerable management work to conceal or alter their own emotions. This emotional labour is often referred to as the "third shift" which is in addition to women's "first shift" of paid work and the "second shift" of responsibility for household tasks (see Hochschild 2000). This emotional caring work is considered to be essential for others' wellbeing as preventative work which builds and develops relationships and is often carried out flexibly alongside other tasks and with considerable personal emotional investment for the care giver. However, concern has also been expressed that the "centrality" and "value" of emotion work are not "recognised" (James 1989:30,31). James considers that this is because the consequences of emotional labour are "obscured" (p.39). Duncombe and Marsden (1993) have also drawn attention to the lack of sociological consideration of love and intimacy within heterosexual couple relationships and argue that the gendered division of emotional labour is based upon assumptions that women take responsibility for the emotion work needed to sustain couple relationships.

This is further exemplified by sociological research concerning sleep. Hislop and Arber's (2003c) analysis of mid-life women's sleep experiences indicates the bedroom as an "invisible workplace" in which women do emotion work to put the emotional and physical needs of their husbands and children beneath their own sleep needs. Venn and colleagues (2008), analysing accounts of couples with children, suggest that this un-negotiated expectation that women will take care of emotional and physical needs of children at night,

often to the detriment of their own sleep needs, constitutes a "fourth shift" of gendered expectation of women. Where women are working at night and their husbands remain at home with the children, women's physical absence prevents them from undertaking a "fourth shift" of night time care. This suggests that women's night work may provide an arena for further understanding about the role of this emotion work and it construction within families' daily and nightly lives. In mothers' absence, do fathers take on some of this emotion work? If so, is this explicitly delegated, expected or are mothers unaware that this happens? Do mothers organise this emotional caring so that needs are fulfilled before and after night shifts? How do mothers feel about being away from their husbands and children during this night time period?

3.3.4 Social class and gendered division of domestic labour

Perry-Jenkins (2005) emphasises the importance of analysing class differences concerning men's and women's engagement with paid work, housework and childcare. Here, consideration of socioeconomic class is employed as a starting point for discussion of gendered patterns in housework and childcare performance and synchronicity of couples and family members.

Firstly, men's involvement with domestic tasks appears to be patterned by socioeconomic class. Warren's (2003) analysis of British Household Panel Survey data indicates that middle class men are more likely to help with cooking, washing and ironing and working class men are more likely to help with childcare, though both groups give some assistance with grocery shopping and neither group gives much assistance with laundry. In this sample, all men work around 50 hours weekly, while middle class female partners work an average of 37 hours, and working class female partners work an average of 23 hours weekly. This suggests that husbands in middle class families may be more likely to help with cooking, washing and ironing than with childcare. Indeed, Warren's (2002) analysis suggests men often retain breadwinner status, but that there may be considerable variation on a continuum from strong breadwinner to weak breadwinner status, according to relative contributions of male and female partners' employment.

Lesnard's (2005) analysis of French time use survey data indicates that higher socioeconomic class couples are more likely to have synchronous work schedules, and that

desynchrony in working hours usually results in greater equity in housework because each partner spends similar amounts of time alone in the home, or alone with children. This suggests that when women are not present to take responsibility, men can and do complete these tasks. Lesnard's findings also suggest that middle class couples with desynchronous work schedules including night work are likely to have more equality in housework than middle class couples with more similar work schedules. However, Lesnard (ibid.) also indicates that such greater equity may be at the expense of the relationship's quality, as the partners can spend much less time together. Presser's (2005:46) data supports this contention of greater housework equity with desynchronous work schedules by indicating men do more childcare and housework where their female partners work different schedules from themselves. Perhaps having a limited amount of common free time but with each partner completing most housework while their partner is at work may increase the quality of couple and family relationships, as household tasks minimally occupy common free time. However, housework may not always be completed while the other partner is at work.

Interestingly, Presser (2004:45) indicates that the total amount of housework often increases when couples work different schedules, as each tends to prepare their own meals and generally "fend for themselves more" rather than combining housework required for all family members. This suggests that while women are at work at night, men may be more likely to do essential and immediately required housework including preparing their own meals, rather than taking responsibility for more general tasks. Additionally, there may be gendered differences in priorities for completing housework. Indeed, Silva's (2002:187) qualitative research concerning general family routines indicates that while men often undertake household tasks while doing childcare, this rarely includes laundry. These indications suggest it is important to compare men's and women's performance and accounts of housework and childcare during periods with and without their partner present in the home.

Having considered the endurance of gendered inequalities in domestic division of labour in contemporary households, literature concerning mothers specifically and their interfaces with paid employment are now discussed.

3.4 MOTHERS, PAID WORK, CARING AND HOUSEWORK

Although the majority of British women are in paid employment, and many are in full time employment, deeply gendered expectations endure that women should have primary responsibility for housework and childcare. These expectations disadvantage women in paid employment, provide additional pressure, and prompt guilt and embarrassment when women feel they are failing successfully to combine paid and unpaid work.

This section discusses gendered inequalities in paid employment affecting women before focusing on gendered expectations of women as mothers. This discussion covers literature concerning "good motherhood", meeting children's needs, employed mothers' gendered identities and the concept of "choice" in relation to mothers' paid and unpaid work.

3.4.1 Gendered inequalities in employment

Firstly, despite many years of equal opportunities legislation, statistics continually show women receiving lower pay than men. For example, the UK Annual Survey of Hours and Earnings indicates that although differences between men's and women's median hourly pay have lessened from 17% since 1998, a 13% gap in pay remains (ONS 2005; ONS 2008). It seems this gendered pay inequality stems from women's assumed responsibility for housework and childcare, maternity leave and career breaks after the birth of children. Indeed, although supposedly gender neutral "family friendly" and "flexible" working policies and approaches have been devised or designated by employers and policy makers, it is argued that this language masks the continuing focus on women as carers and users of these policies (see Kan 2008; Lewis and Giullari 2005; Smithson and Stokoe 2005; Whittock, et al. 2002). It is suggested that such policies allow women to adapt to the demands of paid employment, rather than allowing full integration of "family friendly" policies, changing work culture to render it more equitable (Lewis 1997). Additionally, high proportions of part time and low level employment is undertaken by mothers, as this fits in with childcare (see Warren 2002). It seems night work may similarly fit this model of women adapting to labour market demands, thereby incurring larger costs and disadvantages, rather than labour market culture changing to accommodate women and especially mothers. Garey's (1995) research with female health care workers in United States indicates that despite the lack of sleep and demands of responsibilities for unpaid work at home, some

women choose to work night shifts as this allows them to be regarded as "good Moms" who are both in paid employment and available to their children during the day through their symbolic presence in the family home. Indeed, Dillaway and Paré (2008: 455-456) conceptualise such women as "chameleon mothers": they are in paid employment which is arranged to be less "visible" than day time employment and enables them to fulfil normative expectations of them as wives and mothers.

3.4.2 Gendered expectations of mothers

Literature suggests mothers' lives continue to be structured around expectations that they should take primary responsibility for housework and especially childcare, even if they are also in full time paid employment. It seems night work allows some contemporary women to combine paid employment with meeting these gendered expectations, thereby perpetuating such expectations.

3.4.2.1 Continual care and "being there"

Additionally, a key theme within literature concerning motherhood is the importance of concepts of continual availability, responsibility and care within mothers' identities. For example, Doucet comments that many consider "that the essence of mothering is the responsibility for children" (see Doucet 2006:15). Drawing on the work of Ruddick concerning "demands" of mothering, Doucet argues that "responsibilities" is a more useful way of understanding these gendered expectations for mothers' care of children and considers these to incorporate emotional, social and moral elements. This suggests that both the content and the framework composing and reinforcing the web of mothers' responsibilities are multifaceted in their reach and of the scale which requires continual work to be considered successful. Ribbens (1994:166) describes this in terms of "*constant and subtle negotiation* to achieve some balance." Within this analysis, mothering involves continually working to engage with children and the challenges facing them to ensure the best possible outcomes for their wellbeing. In the same way, Garey (1999) uses "weaving" to describe how mothers may both direct their actions and interpret interfaces between their work and home responsibilities. This alignment of action and interpretation in the same metaphor also demonstrates the value of understanding motherhood and families as achieved through "doing" and "being."

Reflecting this need for continual work, these responsibilities are also clearly grounded in relationships and interaction, reflecting the gendered focus of women more widely on being successful in achieving balance and developing relationships, and in contrast with the focus of men on material success (see Dyke and Murphy 2006). Within this, spending time together is considered central to caring and being a family (see Ribbens McCarthy, et al. 2003:31ff).

Qualitative studies with mothers indicate that to be "good mothers", they feel they should be available to their children as much as possible (Cunningham-Burley, et al. 2005; Garey 1995; 1999). The importance of "being there" encompasses both "potential availability" and "psychological attentiveness" in a way which demonstrates connection between mother and child (Ribbens McCarthy, et al. 2002:210). Thus, this concept of being a "good mother" includes both physical availability of presence and the organisation needed to achieve this, and also a willingness to engage with and respond to children's needs, whether in response to specific requests or a sense that assistance would be helpful.

3.4.2.2 Balancing children's needs with paid employment

In particular, in spite of deep commitment to their paid employment and concerns to be seen as good reliable employees, mothers who are interviewed feel they, rather than fathers or any other care giver, should be there for their children when they are ill (Cunningham-Burley, et al. 2006). Additionally, despite considerable research evidence indicating the contrary, deep concerns and much guilt remain about alleged negative consequences for children where women undertake full time paid employment (see Galinsky 2000; McDonald, et al. 2006).

Southerton's (2006:447) analysis of the temporal organisation of everyday life suggests women's routines become oriented around specific fixed points related to children's needs (for example, delivery and collection from school), so that although there is scope for fathers' involvement in such aspects of childcare, temporal organisation evolves to prioritise mothers' over fathers' regular completion of such tasks.

Within popular discourse there is often a tendency to depict two dichotomous scenarios: "stay-at-home mothers" who do not engage in paid employment and are therefore always

available to their children; and "working mothers" who are in full time paid employment and therefore have limitations on the time available for their children (see Dillaway and Paré 2008; Garey 1995; Garey 1999). This dichotomy may conceal similarities between mothers in the centrality of gendered responsibility for children's wellbeing, regardless of working pattern. Additionally, it may obscure the considerable energy expended by women to balance their careers and contribute to household income through paid employment with gendered responsibilities for their children's care and wellbeing.

Dillaway and Paré (2008:455-456), drawing on analysis of Garey (1995; 1999) concerning the potential for mothers to undertake night work as a means to attaining "stay at home mom" status while in paid employment, discuss "chameleon mothers". This category includes all types of paid employment which is part time or at non-standard hours, thus enabling women to organise their lives to reduce both the "visibility" and "impact" of their paid employment upon their ability to fulfil gendered expectations of care for and availability to their children. In Dillaway and Paré's analysis, these temporally flexible working patterns enable women to incorporate paid employment into identities focused around their children's needs. However, this combination requires considerable additional work for women in negotiating and organising these arrangements for paid work and their caring, and also in minimising impacts of their paid employment upon their children. This suggests that while such patterns may be advantageous in giving women both personal and public acceptance as both paid employees and mothers focused on their children's care, the demands of sustaining this have additional costs for women. It seems that these additional costs for women are likely to be particularly high where paid employment is night work, with its own burdens of disrupted sleep and associated challenges.

3.4.2.3 Gendered identities: acceptance, dissent and gendered expectations

There are many indications that women and especially mothers are expected to accept this responsibility for housework and childcare, and that many women accept these expectations with little dissent. For example, Silva (2002) reports women often accept responsibility for regular domestic tasks such as preparing a daily evening meal, and do not regard this as problematic. Gregson and Lowe (1993) note women are often regarded as better at domestic tasks than men because they notice more than men domestic tasks requiring completion. It seems that this probably occurs because women internalise an expectation

that this is their responsibility, and therefore incorporate into their daily lives a continual alertness to such needs. Indeed, Gregson and Lowe (1993) conclude that their analysis indicates the domestic division of labour within a middle class couple is affected by how domestic labour is related to the partners' gendered identities. Therefore, for example, inequity in domestic division of labour appears more likely if a woman regards responsibility for housework and childcare as part of being a successful woman, mother, wife or partner.

The extent to which expectations about housework and childcare often form part of gendered identities is borne out in a number of studies. In her seminal study *Housewife*, Ann Oakley (1974a) indicates that while housewives may say they are satisfied with being housewives, on probing they may admit that they dislike housework itself. Oakley indicates that this reluctance to concede disliking housework may represent a threat to the self-identity of a housewife, within which housework is a major aspect (p.103). Although this research was conducted over thirty years ago, and the majority of women are now in paid employment, rather than being full time housewives, contemporary data indicates that expectations concerning housework and childcare in particular persist, and often form an important part of women's gendered identity. For example, Stephens (1999), interviewing women doctors in hospital medicine, indicates that where paid help is employed for assistance with housework and childcare, these women doctors very much consider this as substitution for them specifically, rather than as assistance for the household in general. Similarly, Stephens' participants indicate paid help is employed only for assistance with specific housework tasks and childcare while women are at work, and not to allow women to have leisure time.

Two further studies indicate the centrality of responsibility for childcare to contemporary constructions of motherhood by families and by new mothers themselves, Firstly, Jordan (2006), reflecting on her role as ethnographic researcher within families while she was pregnant, indicates participants oriented to her pregnancy by asking about how she would manage housework and childcare as a mother. This suggests participants regarded childcare both as central to Jordan's identity as a mother, and considered it sufficiently central and of public interest for it to be appropriate to ask such questions. Secondly, Perry-Jenkins (2005) indicates that as fathers take more responsibility for childcare, new mothers often become more depressed. This trend despite what is presumably very valuable help of the kind women as a group frequently request and fail to receive from men, and at a particularly exhausting stage physically and emotionally, suggests that expectations

concerning childcare often remain absolutely central to contemporary women's gendered identity.

Women's gendered identities may have shifting and even contradictory themes concerning motherhood, as the two qualitative studies now discussed illustrate. Boulton's (1983) study of mothers who were not employed full time and had pre-school children indicates that women may find different aspects of caring for their children irritating and fulfilling. Specifically, Boulton reports that women often gave their initial opinion about directly caring for their child, and then later gave a more general reflective account of their situation, which was often more positive and in some cases might be seen as contradicting their initial response. Similarly, Oakley's (1974b:77) research concerning housework indicates that many women have a positive attitude to their identity and role as housewife, and yet dislike housework. It appears parallels could be drawn between these women's accounts and those of mothers working at night, who may find the lack of sleep and constant demands of paid work and expectations concerning housework and childcare very difficult, but on reflection are pleased to "be there" for their children (Garey 1995), and because this fulfils gendered expectations of women.

Two more recent studies indicate complex connections between work and home for contemporary mothers and fathers. Cunningham-Burley and colleagues' (2006) study of mothers with school age children indicates close and sometimes contradicting interconnections between home and work. Findings suggest mothers do not differentiate between the effects of paid work and home demands on their stress levels and health. Mothers in Cunningham-Burley and colleagues' (2006) study carefully manage the interface between work and home, presenting themselves as reliable workers through preparing their children for adult life by encouraging them to go to school unless very unwell. However, when children remain at home unwell, despite their commitment to paid employment, mothers in this study usually feel they should be at home with their child. Accordingly, it seems employed mothers carefully manage continual and sometimes competing demands to maximise benefits in their working lives and for their children. While night work may facilitate this management by alleviating direct conflict between working hours and caring for ill children, Cunningham-Burley and colleagues' (2006) study suggests mothers themselves bear remaining pressures. In the case of night work this may involve severely curtailed, poor quality or no sleep.

This section has discussed the extent of expectations on women to "be there" for their children, maximising availability alongside paid employment and putting their children's needs before their own leisure. The discussion has also covered ways in which gendered expectations may become part of women's gendered identities in a way which is regarded positively by women, and yet this does not preclude expressing dislike of particular tasks. Discussion now focuses on the extent to which women may choose to work at night.

3.4.3 Do women choose to work at night?

Within literature concerning shift work, attention has been drawn to the importance of employee choice to work at night, including how choosing to work at night may increase employees' tolerance of night work (Barton 1994; Barton, et al. 1993; Humm 1996). Additionally, Presser (2004) suggests that employees ought to be given information about the risks of working at night so they can make an informed decision about their work schedule. However, she adds an important caveat: "...assuming, of course, they have a genuine choice in the matter" (p.43). While allowing people to choose their shifts may allow night work to be undertaken by those best able to cope with it, the insights discussed above indicate that there may be complex relationships between choice and undertaking night work. In particular, gendered structures in relation to paid and unpaid work and gendered identities suggest that it may be important to consider in more detail how many people and who are able to make these choices, and what the concept of choice means in the context of night work.

3.4.3.1 Motivations and requirements to work at night

Although ambition and enjoyment may be strong motivators for engaging in paid employment, particularly for nurses working at night (see Dex 2003:15), it seems a majority of people working at night have not specifically chosen to work at night, but are required to do so within their job (Presser 2003). This applies to many nurses who are required to work night shifts as part of their contract. This appears not to be uncommon: Marshall (1998)'s analysis of a Canadian national survey dataset indicates that 90% of those working shifts say they do so because their job requires this. For nurses, a "moral imperative" to provide "continuous coverage", twenty-four hour healthcare (Zerubavel 1979:xix, 41, 40) may be influential, marking out nursing as distinctive and an essential service, involving emotion

work and continuous attentiveness to patients' care and well-being (Poissonnet and Véron 2000). This is in contrast with much other night work which may be seen as motivated by and part of an emerging "twenty-four hour society" (Moore-Ede 1993).

As previously discussed, a common theme is that women choose to work at night to facilitate minimal cost, family-based childcare, often primarily provided by themselves during the day (for example, see Garey 1995; 1999; Presser 1986a; 1986b; 1988; 1995b; 2003; 2004; 2005; Presser and Cain 1983). Being available for childcare is often regarded as positive by women themselves, and indeed a longitudinal survey following women from late pregnancy to one year after the birth of their child indicates that evening and night work increases the probability of actually using family-based childcare which women identify as their preferred choice prior to the baby's birth (Riley and Glass 2002). It is possible that many of these women had identified evening or night work as conducive to arranging childcare, and selected their childcare preferences accordingly. This again raises the question of how, with what freedom and at what level choices by women can be made concerning night work.

3.4.3.2 Choice and gendered expectations

Choices and control concerning night work are now discussed in the context of what are often referred to as gendered roles: a gendered division of labour with expectations and enactment involving women having primary responsibility for housework and childcare, and men undertaking full time paid employment with limited or no contribution to housework and childcare. In this context, is it possible to argue that women can be said to be making a free choice to work at night so they can undertake housework and childcare? Catherine Hakim (for example, see 1995; 1996; 2005) believes women can be said to make choices about work and home life and contends that women "choose" either a "marriage career" or an "employment career", and that their "career" preferences affect their "commitment" to paid employment. Specifically, she suggests that part time employees are less committed to their work than full time employees. However, Hakim has been severely criticised (for example, Bruegel 1996; Ginn, et al. 1996) for these contentions, which, it is argued, fail to balance women's agency with structural constraints in women's lives, including the normative gendered domestic division of labour. However, concepts of gendered norms and roles have also been critiqued due to their substitution of apparently relatively innocuous expectations for thorough consideration of the extent of power which may operate in reinforcing differences in opportunities between men and women, including the exercise of

choices and control (see Connell 1987). Freund (1982) and his consideration of social control of the body, again provides helpful insights:

> "Social norms can encourage us to respond to threats to our sense of self or competence either by "giving up" or by frenetically trying to assert control over the uncontrollable." (Freund 1982:61)

This suggests that women working at night may say that they have choice, despite the comparative lack of choice exercised by mothers working at night to facilitate childcare and housework. In this context, is it helpful to regard decisions made about working patterns as exercising choice? Freund's (1982) work suggests that to assert and believe that choice is being exercised is an extension of the power of these expectations which works to preserve these expectations, while simultaneously denying their status as expectations, thereby maximising positive dimensions of these women's decisions by emphasising their sense of agency. Additionally, although analytically it seems clear that such women exercise minimal agency, it seems important to give some consideration to positive feelings of women who have minimised their own childcare difficulties by working at night, and feel this works best for them. This seems to reflect Carol Smart's (2006) contention that second wave feminists' calls to abolish the family (see Oakley 1974a:222ff) cannot dismiss individuals' accounts as false consciousness, but should be reconciled with qualitative research findings indicating the importance of families for social support and to individuals' identities.

It appears choice is a particularly complex concept with strongly gendered patterns in both the context of decisions to work at night, and in organising daily and nightly life while actually doing night work. As such, unreflexive use of the concept of choice within shift work literature seems particularly problematic and requires further discussion with reference to debates concerning employees' and especially women's agency in the context of gendered power.

This section has reviewed understanding of contemporary motherhood in the context of paid employment. This has covered how employment and social structures reinforce gendered expectations of women to "be there" for their children and provide care; and also how such responsibilities become central to women's gendered identities, even if the tasks or certain elements of the tasks are disliked.

Fatherhood, and contemporary understandings concerning fathers and work are now discussed.

3.5 FATHERS, PAID WORK, CARING AND HOUSEWORK

In comparison with the gendered societal focus on women as mothers and feminist scholarship concerning motherhood, understanding about men, fatherhood and their orientation to paid work, housework and childcare is less developed (for example, Burgess 1997; Burghes, et al. 1997; Dex 2003; Marsh and Musson forthcoming; Marsiglio 1995; Nordenmark 2002). This section discusses what is known about the extent of fathers' involvement in childcare and housework and the ways in which fathers may care for their children.

3.5.1 Fathers' involvement in childcare and housework

Additionally, men appear to explain their lack of involvement with childcare and housework by reinforcing both their own and women's gendered identities. For example, Burghes and colleagues (1997:55) argue that although there is reluctance to concede fathers' care of children, especially in tasks beyond play, as it may be seen to threaten fathers' gendered identities, it is likely that many fathers give some care to their children and indeed that men have cared for their children to some extent throughout history.

Lesnard's (2008) analysis of French Time Use survey data indicates fathers spending much more of their time with children in leisure activities rather than care activities. Additionally, qualitative data suggests men appeal to both their own and women's gendered identities to explain their lack of participation in domestic tasks, arguing that their wives and female partners notice dirt much more than they do (Gregson and Lowe 1993), that they would not want to interfere where women are successfully managing everything, and that they do not know how to iron or use a washing machine (Bateman 2006). It seems likely that similar issues may apply for men caring for their children.

Analysis of American Time Use Survey data for 2003-2006 indicates that single fathers spend less time caring for their children than do mothers, but that single fathers spend more time on childcare than do married fathers (Hook and Satvika 2008). This suggests that while

the presence of a co-resident mother may partly explain these gendered patterns in time spent caring for children, these gendered differences in fathers' time spent caring for their children persist even when there is no mother with whom to share these responsibilities or with whom parenting styles may be compared. Additionally, it suggests reasons for women's continued responsibility for housework and childcare (Marsh and Musson 2008). However, analysis based on mothers' reports from a representative sample panel study indicates the emergence of a "new father" role whereby at weekends fathers in intact families may take an equal share in childcare with mothers, with fathers not restricted just to fun or interactive activities (Yeung, et al. 2001).

3.5.2 Fathers' ability to care for children

Despite indications that fathers' involvement in housework and childcare usually remains limited, many feminist scholars have also presented evidence to suggest fathers can successfully care for their children. Ann Oakley (1974a:199) is emphatic that "There is no such thing as the maternal instinct" and accordingly, no biological basis for the assumption that women "naturally" are better suited to childrearing than men. Further, Harriet Presser (1995a:310), having reviewed research literature extensively, concludes, "...there is no strong evidence that fathers cannot "parent" like mothers." Indeed, research findings suggest fathers can be willing and able to parent successfully, in the right circumstances. A number of studies attest to the benefits for the development of fathers and children where fathers care for children and disadvantages of fathers not caring for their children (see Doucet 2006:8).

Three small scale studies suggest fathers can care for their children most successfully where they are given space and time to do this without the mother, but with their support. A questionnaire-based study of nearly 200 fathers in part time paid employment in The Netherlands indicates that space and time are informally negotiated between partners for the father to care for his children, and that in most cases female partners are very supportive of fathers' involvement in childcare, and provide encouragement as necessary (Duindam 1999). Secondly, Marsh and Musson's (2008) study of British men performing telework at home suggests that this can provide a space away from traditional expectations, where fathers care for children in a manner more often associated with women, by becoming emotionally engaged with their children.

Thirdly, a longitudinal study (Riley and Glass 2002) following US women from late pregnancy to one year following childbirth indicates that father care is the most preferred childcare option, with 53% of women in late pregnancy expressing a desire for father care of their unborn child. Although only 23% of women were using primarily father care at their child's first birthday, this option had the highest success rate of any childcare type for achieving the desired type of childcare. Notably, mothers working evening and night shifts were much more likely to use their desired type of childcare than those working other employment schedules. Drawing on Duindam (1999)'s and Marsh and Musson (2008)'s findings, it seems fathers are more likely to undertake childcare (and perhaps housework too) when they are given space, time and support to do this if they are at home while their partner is at work. Additionally, given emphases on fathers' preferences for play and putting children to bed (see Oakley 1974b:180), combined with the likelihood that children will be asleep for a large proportion of their partners' night shifts, such arrangements appear most conducive to fathers' nominal assistance with childcare. However, without reference to fathers' views and accounts concerning childcare, it is unclear how fathers may organise and carry out childcare in their partner's absence at work.

3.5.3 Conclusions – Fathers, paid work, caring and housework

This discussion suggests that although fathers' performance of housework and childcare may be considered threatening to both fathers' and mothers' gendered identities, fathers can be as capable as mothers of taking good care of children, and the circumstances of mothers' night work may be especially conducive to fathers' assistance with childcare. Having considered domestic divisions of labour, and both mothers' and fathers' intersections with paid work, housework and childcare, we now consider interfaces between home and work with a particular focus on children.

3.6 CHILDREN, PAID WORK, CARING AND HOUSEWORK

3.6.1 Children's opinions: communication and acceptance of parents' work

Despite extensive discussion of children's needs, childcare and its arrangement within popular discourse, policy and academic research and debate, very little is known about

children's perspectives on their care and their parents' paid and unpaid work. Galinsky (2000), in a book reporting the results of what appears to be the first study consulting children aged 6-18 years about their parents' work, indicates that how parents work seems much more important than whether they are in paid employment (p.103). Indeed, children in this study are in general supportive of their parents' paid employment and provide constructive suggestions to reduce negative effects of paid employment and to improve family life. These suggestions primarily involve ensuring regular and effective communication, being warm and responsive towards children, and spending time together in an unrushed manner, allowing opportunities for spontaneous discussion as well as teaching children how to cope with stress (see pp.331ff). It is indicated that these children's opinions concur with considerable research evidence suggesting mothers' paid employment presents no harm to school age children, and indeed may offer benefits.

These children's opinions, together with other research data provide strong evidence to counter the continuing intense debates concerning the alleged harm being caused to children when their mothers are in paid employment, and which are presumably fuelled by strong gendered expectations that mothers should be sole or primary carers of their children. While Galinsky's book promises to "Reveal[ ] how to succeed at work and parenting", and like many flexible and family friendly work policies, uses gender neutral language such as "parenting", it appears to be focused mainly towards mothers' concerns about their paid employment, and how mothers can overcome these difficulties, rather than considering fathers' interfaces with paid work. Additionally, while the book provides reassurance that *how* rather than *whether* parents are in paid employment is important (p.103), offering strategies to be more available to their children and suggesting it is important to appear less stressed, this appears to increase the burden upon employed women by providing even more detailed expectations about how they should perform the childcare which gendered expectations already demand.

More recent work consulting children and young people concerning their parents' working patterns echoes these themes of acceptance and the importance of good communication. For 10 and 11 year old children interviewed in England (see Christensen 2002), how time with parents is spent is more important than increasing the time together (p.78). While the majority of the participating children enjoy spending time with their family and enjoy this more than time alone or with friends (p.80), "quality time" in the sense of focused time in special activities is not particularly valued by these children, but instead they place value on

doing ordinary, mundane activities with their family and having someone there for them. Additionally, these children value spending time quietly and being able to plan their own time (p.81). Interviews with 14 and 15 year old children in the UK (Lewis, et al. 2008) again confirm the importance of considering how time with parents is spent. Conflicting themes were found within the accounts given by these young people, with around half indicating that they would benefit from change in their parents' working pattern (especially their mothers'), but also indicating acceptance of current patterns.

Nasman (2003) has also encountered strong acceptance of parents' working patterns among participating children. This acceptance persisted even where Lewis and colleagues (2008:436) drew on vignettes to try to overcome any sense of disloyalty to parents and to encourage children to provide honest accounts. This raises questions about how this strong acceptance alongside understanding of preferred circumstances of parental employment is constructed. The children and young people participating in these studies demonstrated appreciation of the stress and challenges facing their parents and the importance of paid employment in economic terms. Perhaps these complex accounts reflect children and young people's appreciation of the difficulties in balancing economic, personal and family needs of all those involved.

3.6.2 Children's perspectives on parents' night work

Even less is known about children's perspectives on parents' night work than on parental employment in general. Insights from Hertz and Charlton's (1989) rare qualitative study consulting male US air force security guards working rotating shifts and their wives indicates that on descending the stairs after day sleep during periods of night work, fathers may be greeted by their children as though returning from work. This suggests that because fathers are unavailable to their children during day sleep, children may regard them as at work. This is in sharp contrast with the accounts of US mothers working at night, precisely so that they are available to their children during the day, even while sleeping (see Garey 1995; 1999).

This lack of consideration to children's perspectives and lived experiences of their parents' night work appears curious given the quantitative data suggesting negative impacts of parents' night work on children's emotional and cognitive development (see 2.4.4). Over the last decade and more, there has been a growing emphasis on the importance of recognising

children and young people's agency through listening to their opinions and experiences via participation in research and policy fora (see Alderson and Morrow 2004; Christensen and James 2008). This further emphasises the importance of direct consultation with children and young people to further understanding of the influences of their parents' night work.

3.7 TEMPORAL ORGANISATION OF FAMILY LIVES

Families, both in caring and in paid work, are involved in producing and consuming processes both within and outside the household. Gershuny (2002) argues that to fully understand the complexity of contemporary society, it is crucial to draw together understandings of both production and consumption, with considerations of time assisting this linkage. For families with one or more members working at night, paid work and caring may be differently organised in time than in families where paid employment only occurs during day time and especially on weekdays only.

3.7.1 Family lives and routines

Physiologically-focused literature suggests night work is negative socially because it disrupts family and social routines, rendering coordination of activities complicated (see Ahasan, et al. 2001:215; see Costa 1997; Kogi 1996:5). A survey with male shift workers also reports that social support from family members and co-workers is important in helping shift workers to cope with their working patterns (Bohle and Tilley 1993). Therefore, it seems important for night workers to spend time with family members both to reduce social difficulties associated with night work, and to help night workers to cope with night work schedules. Recent qualitative research by Silva (2002) concerning temporal organisation of family life indicates that despite both popular and academic discourse concerning fluidity and individualisation in social life, routine remains "crucial to the organization of daily life" (p.180) for contemporary families. This suggests that coordination of family lives in time is important for organising responsibilities, providing care and developing relationships within families.

Families remain very important to individual identity and for social support (Scott 2006; Smart 2006), and spending shared time together appears important to families (Warren 2003), to the extent that couples appear to time their paid work to maximise shared time together (Hamermesh 2002). However, this particular study does not appear to distinguish

between couples who are parents and couples who are not parents. Indeed, connections between night work and family routines concerning free time may not be as simple as may appear. For example, Volger and colleagues' (1988) analysis of shift working police officer fathers' common free time with their children indicates that although these men had less common free time with their children than day workers, this only accounted for a small proportion of the variance in reported quality of relationships with their children. Further, Volger and colleagues suggest that at certain times, such as after a seventh consecutive stressful night shift, fathers and children spending common free time together may have deleterious effects on the quality of their relationships. However, there are no known studies which consider how shared time together within families are experienced where mothers work night shifts.

Accordingly, it appears important to consider both whether changing everyday family routines in the context of night work is necessarily problematic; and also whether quantity or quality of common free time is important.

3.7.2 Shared time together in families, "hot spots" and "cold spots"

One of the ways in which night work may influence family relationships is in relation to opportunities for sustaining intimacy. It seems the lack of time together as a couple or family, and reduced motivation to engage fruitfully when time is available may also contribute to night work's negative implications for couple and family relationships. Indeed, literature concerning intimacy in couple relationships suggests that, for both partners, being physically close, being listened to, being able to share and to "put aside the masks we wear in the rest of our lives" (Rubin 1983) is very important. The lack of shared time together also indicates that less emotion work on the relationship is likely to occur, given that this is often done simultaneously with other tasks (James 1989). This seems to reflect both Goffman's (1971) theory of "back regions" such as these being essential for maintaining suitable self-presentation in the "front region" and Arendt's theory that "private spaces in which personal experience can take place" are required to permit continued "public discussion" (see Swift 1997:352).

Presser suggests that due to contemporary organisation of life, including increases in shift work, so many people now work non-standard patterns that so-called "intact families" do not

spend time together as frequently as may be supposed. It is argued that when such families are compared with dispersed and separated families, it is important to investigate how family life is lived amid such changing daily rhythms, and reconsider models of family life based upon exclusively office hours day work (see Presser 1995b; 2004; 2005). This suggests that the model of "disruption" upon which much shift work research is based may not be the most appropriate framework for evaluating ways in which night work influences lives of employees and their families. Just as Ribbens McCarthy and colleagues (2003:1) indicate in relation to step-families, then, understanding about lived experiences of night work may be furthered by reflecting on similarities with other families, as well as differences relating to night work.

Southerton's (2003; 2006) analysis of temporal organisation of families' daily lives suggests that rather than very similar routines, efforts may be made to maximise benefits of shared time together by concentrating other activities into particular periods of time. This work identifies that especially in higher socioeconomic class families, particular efforts may be made to complete housework and other chores within particular periods of the day, to make other periods of time available for spontaneous engagement in leisure activities, both within and beyond the household. These periods of often quite frenetic activity to complete certain household tasks are labelled "hot spots", while times designated for leisure but with no particular plan are labelled "cold spots" (Southerton 2003). These patterns suggest housework and other chores may be separated from leisure time, through coordination of family members' daily schedules.

This suggests differentiation between the significance accorded to different periods of time free from paid work: it appears "hot spots" do not in any way necessitate all family members being present at once, and perhaps such chores could be completed more quickly by individuals alone at home at different times; while "cold spots" may be seen as more "quality time" when multiple (but not necessarily all) family members' presence may be desirable. Accordingly, it seems "cold spots" can be scheduled for the limited periods when most or all family members are available; while "hot spots" can occur at other times. However, while this analysis suggests limited common free time associated with night work is not necessarily problematic, this assumes there is at least some common free time to allow designation of "cold spots." This also assumes that the night worker is feeling sufficiently alert for the time to be spent enjoyably and fruitfully. Finally, this designation of particular

times for particular activities suggests organising certain time together with a night working member of a family may be a priority.

3.7.3 Conclusions – Temporal organisation of family lives

This discussion has suggested it may be helpful in understanding social contexts and consequences of contemporary night work to consider in detail what is meant by routines and whether these retain significance in contemporary social and family life. Recent research appears to suggest that while social life beyond work is in some ways not as prescribed in set family and social routines as night work literature may suggest, some forms of temporal organisation and routine which allow fruitful time to be spent together can be important to building and maintaining good social relationships. This reiterates a major theme within this discussion: reflecting Galinsky (2000)'s conclusion that it is not *whether* mothers are in paid employment which is important to their children, but *how* they organise their work and home lives, working at night is not necessarily deleterious to social life due to changes in usual patterns or routines, but appropriate organisation of housework and childcare and attention to social relationships are nonetheless important for minimising negative social consequences of night work.

3.8 CHALLENGING THE NEGATIVE PARADIGM WITHIN SHIFT WORK RESEARCH

It is notable that virtually all physiological, ergonomic and occupational health research and the majority of social research concerning night work suggests that it is predominantly negative both for those working at night and for their families. This is reflected both in general statements about night work having negative consequences and also in research findings. Additionally, policy discussions and general public discourse are dominated by views that night work is very negative biologically, for sleep, social relationships and family life. Most research appears to build upon the circadian system model of one set of social routines superimposed on daily light-dark cycles, with any deviation from this model provoking disruption and concomitant negative consequences for night workers and their families.

3.8.1 Potential for positive consequences of night work

While it is clear that working at night can have negative consequences for the health, relationships and social lives of some night workers and their families, there is a concern that this negative focus may be limiting understanding of the ways in which night workers and their families live through night work and manage its effects. Presser (1988; 1990; 1999; 2004) has drawn attention to more positive aspects of night work, and the importance of considering "some of the potential advantages as well" (Presser 1990:136). Additionally, Presser (1999) has raised awareness of the importance of considering both positive and negative effects of shift work and differences in effects between family members. It seems a possibility that this existing knowledge about negative consequences of night work may help perpetuate itself, given the largely quantitative and deductively oriented nature of much research concerning night work. Although some positive outcomes of night work have been posited in literature, there appears to have been limited research considering these potentially positive aspects of night work or discussing how they may be experienced. For example, Grossman (1997) indicates that working at night may produce benefits financially, for daytime freedom and to facilitate childcare. Findings about the social negotiation and disturbance of couples' "normal" sleep (2003b; Hislop and Arber 2003c; 2003d; Meadows 2005), suggest positive value for partners making their own choices about sleep and possibly getting better quality sleep alone in the context of night work.

Advantages of night work identified within literature focusing on shift work primarily relate to childcare. Mothers' night work may be perceived as positive because mothers are in paid employment while children sleep and are cared for by fathers or other relatives and mothers may be able to sleep while children are at school, and are available to children before and after school. Such arrangements minimise childcare costs and enable children to be cared for by family at all times, with the majority of care while children are awake being provided by mothers. As Garey (1995; 1999) indicates, this also enables women to demonstrate their full commitment to both paid employment and as "good mothers" fulfilling the normative expectation of mothers' responsibility for children's wellbeing by being available to their children at home during the day.

3.8.2 In what ways may night work have positive or negative effects?

Although it is encouraging to discover that night work may have positive aspects as well as the negative consequences which are so prominently discussed, these benefits are not necessarily unproblematically and exclusively positive. Indeed, Presser warns that night work may vary in the extent of its positive or negative characteristics by family member (Presser 1999), and also between families (Presser 2004). Additionally, Strazdins and colleagues (2006:396) argue that "...the potentially liberating possibilities of diverse work times are accompanied by countervailing relationship disruptions and strains." Previous research suggests such liberation may include daytime availability for children, for older parents needing care, for using retail, health and other services at less busy times, and also for social activities including family gatherings. However, being absent during evenings and at night may negatively affect relationships with partners, children and friends, particularly if these people are unavailable during the day. Additionally, night workers often have poor quality and limited duration of sleep due to physiological constraints on day sleep, together with daytime activities and responsibilities encroaching on available sleep time.

3.8.2.1 Night work as positive or negative for mothers?

Crucially, however, it is usually women who work at night to facilitate benefits for childcare. Thus, while women may experience both direct and more symbolic benefits of successfully engaging in paid employment while also being available to care for their children during the day, these women also experience stresses associated with combining full time employment with primary childcare responsibilities, while additionally coping with the effects of limited sleep for themselves as well as negative social consequences of night work for themselves, their relationships and their families.

It is also important to concede that social consequences of night work may be experienced as simultaneously negative and positive. This can be illustrated by drawing on perspectives of mothers without paid employment who are full time carers to pre-school children, who indicate that while they dislike the continual demands of childcare, they like feeling needed by their children (see Boulton 1983).

3.8.2.2 *Limitations of sex role theory approach to night work*

Literature concerning night work often mentions role conflict between work and family roles (Brown 1975; Kundi, et al. 1981; Mott, et al. 1965) for men, and the greater burden of night work upon women due to their domestic roles and responsibilities (for example, see Costa 1996; Grossman 1997). However, sociological study of gender has developed from sex role theory, with its rigid adherence to biological dichotomies of sex, to consider the "doing" of gender as practices or processes which include power relations, rather than just a normative prescription for behaviour (for an early discussion, see Connell 1987). While complex and gendered patterns of expectations persist, it is important to consider that these are maintained via social processes including women predominantly retaining primary responsibility for housework and childcare, rather than biological processes or predetermined influences. It would appear the possibility of greater equity in housework and childcare between men and women might be facilitated by abandoning concepts of fixed roles for men and women with associated expectations of breadwinning and domestic responsibilities. Similarly, by going beyond sex role theory, greater understanding of positive and negative aspects of night work may be developed, as the consequences of gendered expectations can be discussed in full.

3.8.2.3 *Limitations of positive/negative conceptualisations of night work*

Drawing on this possibility of night work being experienced as both positive and negative, it seems important to move beyond the judgements and simplifications involved in a negative/positive dichotomy to consider how night work is experienced and lived by night workers and their families. Indeed, Presser (2005) has indicated that understanding of these work schedules may be furthered by fully considering the complexities of their effects in the lives of different individuals and families. The importance of acknowledging limitations of dualistic positive/negative approaches to understanding night work is illustrated by debates within studies of families and paid employment. As section 3.2.2 discusses concerning interfaces between work and home, there are two main hypotheses: that work promotes stress in the home environment; and that home lives enhance the work environment (see Cunningham-Burley, et al. 2006:386-7). These hypotheses appear akin to simplistic distinctions between positive and negative aspects of night work. As such, both sets of theory appear to overlook complex lived experiences of contemporary life, including the

increasingly untenable position of distinguishing between a sphere of paid work and a separate sphere of unpaid work (see p.388).

Indeed, recent considerations of how paid work may be combined with housework and childcare propose that oppositional and dualistic terms such as "balancing" and "juggling" should be replaced with "weaving" (Garey 1999) and "navigating" (Galinsky 2000), which more closely reflect the complex ways in which intersections between paid and unpaid work are negotiated. It seems persisting with exaggerated distinctions between paid work and unpaid work may render less visible the total amount of work frequently undertaken by women, who often combine full time paid employment similar to that performed by men, with taking primary responsibility for unpaid work within the home, including housework and childcare.

This section has indicated that understanding of night work and its social consequences may be developed by moving beyond the focus on night work as negative predicated on the circadian system model. While there may be positive consequences of night work, it is important to consider gendered expectations and patterns and ways in which night work's influences may have different consequences for different employees and their families in different social contexts.

3.9 CONCLUSIONS – NIGHT WORK WITHIN GENDERED AND FAMILY CONTEXTS

Discussion within this chapter has confirmed the importance of looking beyond the existing focus on night work's "impacts" on individuals, the conceptual focus on the circadian system and its disruption, and assumptions about night work's negativity for employees working this pattern and for their families.

This discussion has drawn attention to the power of normative gendered ideology concerning women's responsibility for housework and children and its importance within mothers' identities. Sociological literature demonstrates the dominance of these gendered expectations which structure women's experiences of paid employment and relationships with their husbands and children. This raises questions about whether "choice" and "tolerance" focused on a woman and her working pattern can be appropriate concepts for

evaluating coping with night work. It also suggests that the current conceptual focus on night work as negative (and the oppositional focus on the possibility of night work having positive consequences) may place limits on understanding how this working pattern is experienced.

Literature concerning fatherhood indicates that although men are as able as women to care for children, gendered expectations and identities usually lead to men only assisting with certain aspects of care for children rather than taking responsibility. The small number of existing studies which involve children and concern interfaces between paid employment and families suggest that children regard mothers' employment positively and consider that limited shared time can be moderated by good communication.

Consideration of the temporal organisation of contemporary families indicates the importance of shared time together to relax and build and develop relationships. However, this literature also suggests that this time together may be limited in most contemporary families (not just families including shift workers) because of the many demands on time, individual family members' daily schedules and the prevalence of "nonstandard" work hours beyond weekday office hours. This discussion has also introduced the concepts of "hot spots" where there may be much activity and completion of essential tasks, so that "cold spots" of more relaxed leisure time may be enjoyed within families (Southerton 2003).

Throughout this chapter, an important theme has been the focus on families having meaning through "being" and through "doing" in relationships with other family members, and the value of understanding women as "weaving" (Garey 1999) lives between paid employment and unpaid responsibilities in their families rather than using pre-defined or discrete concepts. This social constructionist approach to understanding the diverse ways in which night work may be experienced will be drawn upon within the present study, whose methodology is discussed in the following chapter.

Chapter 4 - Methodology

4.1 INTRODUCTION AND RESEARCH OBJECTIVES

This chapter discusses the study's methodological approach and provides details of the mixed methods and ways in which these are employed within the whole family approach. Strengths and limitations of this approach and these methods are considered.

4.1.1 Methodology Overview

This study has a primarily exploratory, inductive stance within a broadly interpretive sociological framework which includes mixed methods with whole family participation. The study primarily employs qualitative methods to access perspectives of both social and bodily lived experiences of night work for female nurses and their families, and which also draws on self-completed timing logs, mood scales and questionnaires in a more deductive manner.

Many studies have identified the intersection of physiological and social factors and consequences in the context of night work (Gadbois 1981; ILO 1978; Mott, et al. 1965; Reinberg, et al. 1981; Wedderburn 1967), as "a multidimensional phenomenon" (Menna-Bareto, et al. 1993:138) and as "a multifaceted problem that therefore requires multifaceted solutions" (Monk and Folkard 1992:51). Chapter 2 illustrates that despite indications of the importance of night work's influences on social relationships and responsibilities alongside physiological consequences within research which is primarily physiological, quantitative and positivist, little previous research has considered in detail the perspectives of people living with this working pattern or the social structures which pattern these experiences.

The previous chapter illustrates the range of literature which contributes to understanding of women's paid employment, "mothering" and gendered expectations about responsibilities for housework and children's wellbeing. Throughout this chapter, the focus on using a social constructionist approach to understand families, relationships and the wider social contexts of families' lives as achieved through "doing" and "being" rather than existing in pre-defined, reified ways is clear. This integrated approach to families and paid and unpaid work is intended to assist in developing understanding of night work and its influences beyond the focus within existing shift work research on "impacts" for individuals within the circadian model of disruption.

4.1.2 Research Objectives

Research objectives cover aims in developing understanding about how night work has influences for women and their families; and in what this detailed focus on experiences of night work may contribute to understanding of contemporary families' daily and night lives. Research objectives cover the following areas:

- To explore lived experiences of night work for nurses, their husbands and children
- To consider perspectives of nurses, husbands and children alongside diary, log and saliva data relating to activity on particular days
- To consider whether the social influences of women's night work can be further understood by developing their conceptualisation beyond the current focus on the circadian system model of impacts and disruption for individuals
- How is night work organised in relation to paid and unpaid work, study, leisure and sleep needs within families? What consequences are there for gendered expectations and identities?
- In what ways does night work have influences within families as integrated units?
- How is night work understood and regarded by nurses, their husbands and children?
- What can experiences and influences of night work reveal about contemporary gendered expectations and mothers' identities?

This chapter first discusses in detail the conceptual approach of this study which combines an interpretivist perspective with acknowledgement of the corporeality of sleep; and the mixed methods and whole family approach is then discussed. The chapter then covers the research design and initial methods testing and refinement; sampling framework; participant recruitment process and details of participants; and study methods and data collection processes including the two week study period and qualitative interviews. The ethics of this study and procedures undertaken to protect participants' wellbeing are discussed; before consideration of rapport established with participants and their engagement; and discussion of the data analysis processes employed.

4.2 CONCEPTUAL APPROACH

4.2.1 Interpretive

The primarily interpretive framework of this study focuses upon exploring female nurses', their husbands' and children's perspectives of their daily and nightly lived experiences of nurses' night work. Conceptually, this involves considering intersections between bodily experiences and changes, ways in which night work may affect social relationships and responsibilities; and also intersections between experiences and processes in relation to work and to home lives. At the analysis stage, the focus is on how night work influences relationships and responsibilities within families, but also considering work contexts and intersections with physical changes and effects.

Previous shift work research has been limited in its conceptual focus on negative "impacts" on individuals as a result of disruption to a circadian system model; its empirical emphasis on physical influences and night workers themselves; and its methodological focus on surveys and secondary analysis of outcome-focused data. As a result of these limitations, an interpretivist approach has been chosen to enable the focus to be opened beyond the deductive. This enables consideration of a wider range of experiences and influences from a range of mixed methods and family members' accounts, exploration in greater detail of the social contexts in which these influences are experienced, and consideration of broader conceptual interpretations which reflect the nuances and relationships through which social lives are lived and given meaning.

This combination of methods from natural and social sciences within a broadly interpretive stance appears to build on Mason's (2006) discussion of the benefits of integrating methods within the social sciences, using a qualitatively oriented outlook and motives. Indeed, Mason (2006-22) indicates that using a qualitatively oriented outlook and motives to integrate methods within the social sciences brings flexibility and creativity, reflexivity, appreciation of alternative perspectives, complexity and nuance. Similarly, Brannen (2005:180) indicates that a qualitative orientation permits contradictions between and within data to be valued. It seems this orientation may be particularly valuable in giving "equal weight" (Moran-Ellis, et al. 2006a) to the contributions of both physiologically focused data

(logs, mood scales and saliva data) and participants' qualitative accounts, to maximize understanding.

Interpretive sociology includes considerable variety: indeed, there are difficulties in providing one encompassing definition (see Jary & Jary, 1999). One agreed aspect of interpretive sociology is rejection of Durkheimian "social facts" in favour of a view of knowledge as always relative. This relative approach suggests an epistemological orientation open to considering other philosophical approaches and forms of data. However, this should not imply that interpretive sociology can easily draw on quantitative data oriented to natural scientific epistemology. This is because there is no accepted method of analysis (interpretive sociology has no specific data analysis procedure), and while interpretive sociology is open to alternative views, it expects any such alternative accounts also to have a relativist orientation. Log, mood scale and saliva data are included within this study to enable validation against previous shift work research and to provide additional insights into physical and emotional influences at specific time points alongside the more general qualitative accounts. While the log, mood scale and saliva data within this study all have a positivist orientation, they are to some extent open to subjectivity through their self-completion (logs and mood scales) and variation in the timing of saliva data collection. While this subjectivity does not extend as far as relativism, the supporting role of these data alongside a large amount of qualitative data partly mediates these difficulties with the primary orientation of the study remaining interpretive.

4.2.2 Acknowledging biological physicality of sleep

The approach of this study, while broadly interpretive, also recognises bodies' fleshy corporeality through effects upon sleep and mood. This approach therefore maintains analytical distinctions between the body's fleshy, material "corporeality" (Williams 2001) and its shaping by "contemporary social relations and structures" (Shilling 2003:182), but the importance of dynamic relationships (see Shilling 2003:91) of continual interaction between biological and social is also emphasized.

The central process of evolution involving both biological and social facets interacting and being mutually interdependent is often used to support claims of ontological interdependence (Davey 2003; Elias 1991; Hirst and Woolley 1982; Newton 2003; Shilling

2003). Within this conceptualization, the body is understood as "unfinished" (Shilling 2003:11). This is summarised by Williams and colleagues' contention that "bodies *become*, both as biological entities and - simultaneously - socially engaged actors" (Williams, et al. 2003:4) and that "...it makes little sense to think of human bodies as the "products" of either our genes or our cultures, but rather as a meta-phenomenon emerging from the interaction between these two" (Davey 2003:25). This acknowledges that bodily experiences are moderated both by biological processes and by the social contexts in which they occur, with the biological and social both affecting each other and contributing to the experienced effects.

In discussing biological and social processes and their interdependence, it is important not to gloss over differences between ontology and epistemology. Indeed, it is contended that there are "complex relations" between biology's ontology as "a set of living processes and animating principles" and the epistemological discipline of biology as "a subject of scientific study" (Williams 2006:13). Similarly, the ontology of social processes is linked in complex ways with those living processes, and with the epistemological discipline of sociology, and the other disciplines which consider aspects of social life and which are drawn upon in this thesis. Reflecting this, ontology is always moderated by epistemological knowledge (Hacking 1999). As interdisciplinary research involves more than one epistemological discipline, this can create very complex questions about ontology because of potential differences in understanding or interpretation of the same ontology through different epistemologies.

According to Kuhn (1970), from whom the concept of paradigm originates, this can be seen as problematic due to an emphatic belief that different research paradigms such as positivist and social constructionist are inherently incompatible, as they combine completely different ontological views of the world, and epistemologically distinct ways to research that world legitimately. Positivist ontology involves external reality existing beyond perspectives, with positivist epistemology incorporating searches for objective facts through replication; while interpretive ontology involves no external reality, with everything subject to social construction and moderated through perspectives, with interpretive epistemology focusing upon eliciting perspectives. While both positivist and interpretive conceptual frameworks are employed for research conducted within the social sciences, it can be argued that a further dimension is added where sociological study of subjective socially embodied

experiences also acknowledge influences arising from the body and its internal functioning as an external, objective reality.

Strong positivist sociobiological attempts to explain social behaviour through biological characteristics alone, such as genetics, have been made, as have Foucauldian discourse analyses which obviate the physical body within a strong social constructionist tradition (see Shilling 2003:43ff, 65ff). It seems these relatively rare and yet extreme orientations have created fear of incorrectly representing and directly engaging the body and biological processes more generally within sociology. Indeed, it seems that on the basis of these extreme positions, many sociologists have gained unfortunately extreme perceptions of more positivist epistemologies, including natural scientific ones. For example, Avis (2005) argues that there are no fixed relationships between qualitative and quantitative methods and particular epistemological assumptions. He also contends that while positivism is often used as a benchmark to assess epistemological orientation, true positivism constitutes a "red herring." Similarly, Udry (1995) contends that while sociologists often "ridicul[e] the excesses of sociobiology", they often fail to include acknowledgement of any biological influences upon social life. Indeed, Connell (1987:87), discussing gender and its influences upon the physical body, notes that while symbolic distinctions may be made between the social or symbolic and the biological, in practice the two are intertwined, and thus "The traditional dichotomies underlying reductionism now have to be replaced by a more adequate and complex account..." Further, Adam (1990:89ff) suggests that social scientists' poor understanding of natural science perpetuates erroneous beliefs that natural science continues to espouse Newtonian rigidity, when it has actually long-incorporated variations including environmental influences and some social influences.

It seems that, reflecting these misunderstandings, fear of appearing or being considered essentialist has resulted in very limited consideration of the biological body within sociology, or assessment of its relevance to social life. Indeed, despite extensive literature concerning sociology of health and illness and the body, it is contended that although the body has been identified as important, the physical body's materiality remains conceptually absent from sociology (Shilling 2003:181), and repeated calls are made to "bring the body back in" (see Williams 2006), and to remember the flesh among a plethora of signs and symbols (see Williams 2003). This study, with its primarily interpretive conceptual framework which focuses upon participants' perspectives on the ways in which biological and social processes intersect in their daily and nightly lives in the context of women's night work, also considers

the influences of gendered expectations and responsibilities, particularly for housework and childcare. This follows both Connell (1987) and Freund's (1982) emphasis on considering power when conceptualizing bodies and their contexts.

4.2.3 Perspectives of women, husbands and children within a whole family approach

This study employs a whole family approach which values the perspectives of women working night shifts and their husbands and children concerning influences of night work and draws upon all family members' perspectives to develop understanding about how women's night work has influences for whole families. This whole family approach is employed within a feminist orientation which recognises the importance of drawing directly upon all family members' perspectives to develop integrated understanding of families. Whole family approaches are used within social sciences for topics affecting multiple members of families and can be particularly useful where the activity or health status of one person has effects for other family members. For example, Neill (2007) has drawn upon whole families to explore how children's acute illness is managed within homes. Whole family approaches are also used within more policy-focused work to help understand children's roles within families: Aldridge and Becker (2002) and Frank and Slatcher (2009) have used this approach in understanding and supporting the unpaid work of children and young people who are family carers. A similar approach may be used within therapy settings where it is important to support and enable all family members in working together towards therapeutic goals which are often focused towards one individual (for example, Russell, et al. 1998).

Within this study, drawing on nurses', their husbands' and children's accounts concerning their perspectives of night work's influences enables consideration of perspectives of each group of family members' own experiences, and also their perspectives on how other members of their family experience night work. In the same manner as mixed method approaches, this enables wider understanding to develop by considering similarities and differences in the accounts and experiences presented. This approach is thus open to engaging with the complexities and "messiness" which may become apparent in drawing in detail on perspectives of multiple family members concerning daily lived experiences, rather than the simpler and more "hygienic" approaches which have been criticised by feminist scholars for their lack of realism (Maynard and Purvis 1994). The importance of drawing on husbands' and children's perspectives is heightened by the physical absence of their wives

and mothers from home during night shifts; the ways in which understandings of housework and childcare may be dominated by women's accounts according to the normative gendered ideology; and the importance of considering children's voices which has been acknowledged increasingly within sociology in recent years (Hutchby and Moran-Ellis 1998).

This section has introduced the study's conceptual approach which is primarily interpretive with a focus on valuing perspectives of women and their husbands and children within a whole family approach, while also acknowledging the physical corporeality of sleep and the consequences of changes in sleep timing and duration. The study's methodological approach is now discussed before consideration of the details of the research design and methods.

4.3 METHODOLOGICAL APPROACH

This study has a mixed methods approach, using a primarily interpretive and qualitative research design complemented by quantitative data collection (mostly with a deductive approach) covering the perspectives and experiences of women night workers, their husbands and children concerning their lived experiences of rotating shifts including night work. These perspectives cover physical influences of night work as well as social relationships and responsibilities. This methodological approach is defined as "mixed" rather than "integrated" or "combined" (Moran-Ellis, et al. 2006a) because although two bodies of literature have been involved since identification of research objectives and analysis is conducted across methods as well as for each method separately, the focus is primarily on qualitative data, with quantitative data employed in a supporting and furthering role.

4.3.1 Qualitative and quantitative methods

Using both qualitative and quantitative methods within this study enables consideration of detailed accounts which include the meanings of particular situations for individuals; while also including data within pre-defined categories which can be compared easily with other data from the same person and others. Using these two different approaches can provide different insights into the same topic. For example, sleep logs provide information about the timing and duration of individuals' sleep; while audio sleep diaries include feelings after

waking and mention of anything which may have affected the quality, timing and duration of this sleep.

Although the benefits of this mixed approach are clear, combining quantitative and qualitative methods in one study can be seen as problematic because many regard quantitative and qualitative as separate paradigms "act[ing] as lightning conductors to which sets of epistemological assumptions, theoretical approaches and methods are attracted" (Brannen 2005:173). However in practice these concerns may have been exaggerated.

Although employing a combination of qualitative and quantitative methods within the same study continues to be much debated within social sciences, very many studies do combine both qualitative and quantitative elements. Indeed, even studies employing only qualitative interviewing as a research method usually give an overview of the topic by drawing on statistical data, while analysis and presentation of qualitative data usually involves some consideration of a theme's prevalence. Similarly, studies employing quantitative data usually draw on some qualitative elements, whether this is during a literature review, interviews or focus groups for designing questionnaires, in open-ended survey questions, or in analysing the quantitative data. Accordingly, it is argued that simplistically misleading distinctions are often made between quantitative and qualitative (Brannen 2005:175) in a manner which suggests monolithic differences and denies permeability between the two orientations (Green and Preston 2005:167). Indeed, even while Chronobiology is oriented towards quantitative data collection and statistical significance of results within a positivist approach, many studies operate sampling strategies and sample sizes which are very similar to qualitative sociological studies' samples. Further, some data may not be clearly quantitative or qualitative in orientation (see Coxon 2005). For example, audio sleep diaries may include information about the timing, duration and meanings of sleep for the person making the recording. These data might be analysed only as quantitative, only as qualitative or as both quantitative and qualitative.

4.3.2 Inductive and deductive methods

This study is primarily inductive in focus, but also includes some methods which display a deductive orientation. The importance of the inductive approach in conceptually facilitating development of understandings of night work's influences beyond the existing focus on

"impacts" and disruption of the circadian system model has been discussed above. Including more deductively oriented methods such as validated questionnaires, logs, scales and saliva data within this primarily inductive orientation permits comparison with other study's findings and also enables integration of physiologically focused influences of night work which have been the subject of other detailed research studies within this study's focus on social organisation and influences of night work.

In a similar way to qualitative and quantitative methods, distinctions between inductive and deductive research approaches also appear to have been exaggerated. Brannen (2005:175) indicates that both qualitative and quantitative studies may incorporate both inductive and deductive elements. For example, most inductive research involves at least identification of pertinent themes from relevant literature prior to data analysis, while most deductive research has scope for further analysis based upon results from the data. In practice, while prior ideas, with their associated epistemological assumptions, may in some ways obscure complete openness to emergent themes, it seems such an approach may maximise understanding of complex interfaces between biological and social processes. This appears to reflect Adam's (2004) contentions that theory alone without orientation to people's experiences cannot allow adequate understanding of time.

4.3.3 Methodological aims

Although interdisciplinary research drawing on mixed methods may yield more data, it is acknowledged that more data do not necessarily produce better research (see, for example Aroni 2006). Indeed, more data, particularly where these are collected using different methods and by drawing on perspectives of multiple social actors within one social setting or one chronological episode may produce a more complete picture, but one which is much more complex and may include apparently or obviously contradictory assertions and themes.

Within the present study, the mixed methodological and conceptual approach and the accounts of multiple members from each family are important in enabling detailed and multifaceted understanding about night work's influences. These aims are in contrast with the often very clear pictures presented by existing research concerning night work and its apparently exclusively negative implications for social and domestic life (see Colligan and

Rosa 1990; Gadbois 1981; White and Keith 1990) based upon quantitative analysis, leading to assertions such as "The effects of shiftwork on workers, their families, communities and organizations have been well-documented" (Baker, et al. 2004:307).

Female nurses working rotating shifts and their families are the focus of the present study. Women working night shifts have been chosen for this research because it appears experiences of their night work may provide insightful as a starting point for developing detailed understanding about how night work has influences within families. As Chapter 3 highlights, the lives of women are often focused around the needs of others within their families in fulfilment of normative gendered ideology and this integration with other family members is in stark contrast with the focus within physiologically focused shift work research on men working in engineering, industry and transportation (see Chapter 2).

Nurses participating in this study are working on rotating shifts rather than permanent night shifts. This is because permanent full time night shifts appear relatively rare as a shift pattern and physiological adaptation of the circadian system becomes possible where several night shifts are working consecutively (Bjorvatn, et al. 1998; Dumont, et al. 2001). Additionally, rotating shifts require continual adjustment of the employee and their family to a different work pattern; and they permit comparisons between night shifts and other shifts which may enable clearer understanding about the influences of night work in comparison with other shifts.

Given the exploratory and detailed focus of this study and the wide methodological scope, including qualitative and quantitative methods covering deductive and positivist oriented methods and involving whole families within the wider inductive and interpretive approach, participants include a relatively small number of families (20, including 74 people in total). This follows the approach of McCrae (1986) who also drew on a small number of families to explore in detail an employment situation not conforming to normative gendered expectations: "cross-class families" in which women held paid employment positions considered to be within a higher socioeconomic grouping than their husbands' employment.

This section has discussed the ways in which this study combines quantitative and qualitative, and also deductive and inductive approaches and argues that although these combinations may present some methodological and conceptual challenges, the differences

between these approaches may have been exaggerated. This section also discusses this study's focus on women's night work and in particular where this is part of a rotating shift schedule.

4.4 RESEARCH DESIGN AND REVIEW

The research design and methods have been developed by the author[4] in collaboration with Supervisors. In addition to acceptance as a valid doctoral research project by both the Department of Sociology and the School of Biomedical and Molecular Sciences, the scientific quality of the research was assessed by the University of Surrey Research and Enterprise Committee, who granted the author a three year University of Surrey Research Studentship.

A study protocol was compiled, giving full details of methods and including copies of recruitment materials, participant information sheets and participant questionnaires and booklets. The study protocol was amended in response to questions from Surrey NHS Research Ethics Committee, and also according to developments in the study. The study protocol received a favourable ethical opinion from both Surrey NHS Research Ethics Committee and from the University of Surrey Ethics Committee.

In each NHS Trust from which nursing staff were recruited to participate in the study, the study protocol was submitted to the Research & Development Unit for assessment and also approval by senior staff. While most NHS Trusts provided an approval letter, one NHS Trust also established an honorary contract with the author.

Details of the methods employed in the main study were refined and improved during three rounds of development and pilot work.

[4] In this chapter, Elizabeth Thompson is referred to as "the author" except in situations directly relating to participants, when she is referred to as "the researcher."

4.4.1 Development Work and Pilot: Initial methods testing

The author and another researcher completed all the required procedures daily on themselves for a two week period, including wearing an Actiwatch all the time and providing two saliva samples daily. Following this, some changes were made to participant booklets to further increase clarity about sections and tasks to be completed each day, and to reduce paper used.

Secondly, comments on the content and structure of participant booklets were made by two pre-teenage children and two small classes of secondary school pupils. Two primary school age children, two teenage children and two adults also completed the participant booklets and audio sleep diaries for a period of up to a week during a preliminary testing of methods stage. Requests were made for honest, full, critical and constructive feedback. As a result, several changes were made to participant booklets and instructions for audio sleep diaries to further improve the clarity of instructions. This included suggestions from pre-teenage children being applied to participant booklets for all family members.

Thirdly, the first two families participating in the main study were asked for detailed feedback on their participation. An additional researcher (Emanuela Bianchera) assisted with the first visit and both researchers provided detailed reflections on the data and how it was collected. This indicated that families soon became familiar with what was required and many participants were surprised how quickly the two weeks passed and yet felt rather odd afterwards at not continuing to collect these data. During and following this stage, a few minor changes were made, including further improving participants' confidentiality in the ways described below in Section 4.8.4 concerning anonymity and confidentiality.

4.5 SAMPLING FRAMEWORK

4.5.1 Inclusion criteria

Given the emphasis of this study on understanding experiences of night work for women working as nurses and their families, nurses were recruited to the study together with their husbands and children.

Although the study employs a whole family approach, families were recruited because they include a nurse and therefore all participants were recruited through nurses.

As the study is very detailed, drawing on many different types of data from multiple family members, twenty nurses and their families was deemed an appropriately sized sample.

The inclusion criteria were female qualified hospital nurses and midwives[5] working full time on internal rotation shift patterns including at least two consecutive night shifts of at least eight hours between 8pm and 8am. The inclusion criteria also specified that nurses were aged 30-55 years and living with a male partner or husband[6] and at least one child aged 8-18 years[7].

4.5.1.1 Qualified hospital nurses

Only qualified hospital nurses were included because nurses in other settings may not be working on regular rotating shifts including night shifts where they need to remain awake throughout their working hours (with the possible exception of their break during the shift). Due to the differing training requirements, responsibilities and remuneration, unqualified nursing staff may be considered to be in a different socioeconomic group from qualified nurses which may have an impact on family resources, husbands' work patterns and perspectives on night work. Given its graduate status and remuneration at Band 5 and above within the NHS Agenda for Change pay scales, being a qualified hospital nurse is likely to be regarded as a middle class occupation. The annual pay for the 2009/2010 financial year is £20,710-£26,839 for Band 5 including staff nurses and entry level midwives; £24,831-£33,436 for Band 6 including most midwives, nursing team leaders and specialists; £29,789-£39,273 for Band 7 including nursing and midwifery managers. This compares with Band 2 (£13,233-£16,333) for most nursing clinical support workers (includes Health Care Assistants) and Band 3 (£15,190-£18,157) for higher level nursing clinical support workers (NHS 2008:5). .

[5] Both nurses and midwives are referred to as nurses throughout this thesis.
[6] Both male partners and spouses are referred to as husbands throughout this thesis. Unless otherwise specified, in this thesis, "father" refers to co-resident fathers and stepfathers.
[7] Children and young people aged 8-18 years participating in the study are referred to as children throughout this thesis.

Additionally, accounts of qualified nurses in this study who had previously held positions as Health Care Assistants indicate considerably greater responsibilities during night duties in their qualified roles.

Nurses appear to form a significant proportion of the UK's female night working population. Indeed, over 600,000 nurses and midwives are registered with the UK Nursing and Midwifery Council (NMC 2008) of whom 89% are women (NHS 2008; NMC 2008). 386,112 qualified nursing, midwifery and health visiting staff worked for the NHS in England in September 2004 (DoH 2005), of whom 263,991 work in acute, general, elderly, paediatric and maternity nursing (NHS 2008) and many of these nurses and midwives regularly work at night.

As 74% of nurses and midwives registered with the Nursing & Midwifery Council are aged 30-54 years (NMC 2008) (and 77% of nurses and midwives working in the NHS are aged 25-54 years (NHS 2008)), these age parameters permit sampling across the majority of the nursing population. This sampling strategy includes nurses with varying duration of night work experience and with children of varying ages, but without introducing physiological and social circumstances and sleeping patterns which may be specific to nurses in a quasi-student period in their twenties or in the latter period of working life.

4.5.1.2 Rotating shifts including night shifts

All participating nurses worked at least 30 hours weekly in hospitals or hospices on internal rotation systems which include day shifts and at least two consecutive night shifts. Costa (2003) has drawn attention to the many "thousands" of different shift systems in operation. Consultation with many nurses indicates that shift systems are as varying in health care as in other areas of shift work, with many different systems often operating in the same hospital. Consequently, no national statistics are available on whether there is one shift system worked by the majority of nurses. However, general indications are that permanent full time night nursing is relatively rare in the NHS. While there is debate about its appropriateness (Horwood 2004; Scott 2004), an internally rotating shift pattern of several 10-12 hour night shifts interspersed with shorter early and late day shifts seems relatively common at present among full time nurses. This pattern of internally rotating shifts worked by participating nurses also enables comparisons to be made between sleep and lived experiences during

periods of night work and day work.

Nurses participating in the study worked at least two nights consecutively and where possible three or more consecutive night shifts. This is because it appears such patterns may be much more socially disruptive than working just one night (Thompson 2005) and several studies concur that physiological effects including a large sleep debt or adaptation of the body's circadian rhythms to night work are more likely after two or three night shifts (Bjorvatn, et al. 1998; Dumont, et al. 2001; Grossman 1997; Wedderburn 2000; Wilson 2002).

4.5.1.3 Couples with children

Only female nurses who are part of a co-habiting or married couple with at least one co-resident child aged 8-18 years were included. The study includes the husbands (or male partners) of these female nurses and at least one co-resident child aged 8-18 years.

In common with many other studies, this approach was used to ensure similar levels of responsibilities within each family (see Haines III, et al. 2008:345). Couples are of opposite sex only because of the focus on gendered responsibilities for housework and childcare which may be organised in different ways and with different implications for gendered identities in same sex couples.

4.5.1.4 Children

Including children within the same study as their parents follows Nettleton's (2001) research where insights into children's experiences of the family home being repossessed were gained through qualitative interviews with children. In this study, only children aged 8-18 years are recruited for this research. Although very young children have been shown to be competent research participants (Greig and Taylor, 1999), children under 8 years did not participate because very specific methods may be required and the researcher might find it difficult to ask appropriate questions to address the research aims. In addition, both parents and children may be reluctant for children to be interviewed alone, or to participate in any way.

If couples have more than one child aged 8-18 years living with them, all these children were invited to participate. All families participating in the research included a female nurse, their husband or male partner and one or more co-resident children aged 8-18 years.

4.5.1.5 Language used to describe participants

Both nurses and midwives are referred to as nurses (or women/mothers/wives) throughout this thesis. Similarly, both spouses and male partners of nurses are referred to as husbands throughout this thesis. Unless otherwise specified, "father" refers to co-resident fathers and stepfathers. All mothers (nurses) are co-resident with birth children only. This is in the interests of clearly identifying groups of participants while minimising sentence complexity. Children and young people aged 8-18 years are referred to as children. This is to minimise sentence complexity, but also to identify all these participants as children of the nurse.

4.5.2 Exclusion criteria

4.5.2.1 Sleep medication

Potential participants regularly using sleep medication were excluded from participating in the study as this is likely to affect significantly their sleeping patterns, sleep quality, sleepiness and mood. One nurse taking Temazepam occasionally to manage her sleep following night shifts was included in the study. A full list of medications taken by participants is provided in Appendix 15.

4.5.2.2 No fluency in English

Due to the amount of verbal and written communication needed for participation and the lack of funds to employ translation services, anyone not fluent in English could not participate in the study.

4.6 PARTICIPANT RECRUITMENT

Nurses were recruited via their colleagues and senior staff in NHS hospitals. To recruit NHS staff, approval was first sought from the Research & Development Unit of each NHS Trust. Approval to recruit nurses for the study was granted by eight NHS Trusts covering thirteen hospitals in southern England. Ten independent hospices and hospitals also granted approval to recruit and displayed posters, but as none of their staff participated in the study further details are not provided.

4.6.1 Distribution of recruitment materials

Once approval was granted by the Research and Development Unit, contact was made with the Nursing Directorate in each hospital to request their assistance with recruitment and to make their nursing staff aware of the opportunity for participation in the research (see Appendix 1).

Recruitment in hospitals used a colour poster (see Appendix 2) which clearly identifies inclusion criteria, gives a description of the study methods, indicates that an incentive payment of £150 per family is given on completion of the study (with pro rata payments if participants withdraw before completing the study), and provides contact details for further information. Posters were displayed in staff rooms and other appropriate areas; electronic copies of the poster were sent to matrons, ward managers and senior nurses with a request to inform nurses fulfilling the recruitment criteria; and the poster and/or a summary of the research were published in staff newsletters. Recruitment methods used varied between sites, and were implemented by nurse management. Additionally, other contacts working within hospitals were asked to alert colleagues to the research, using posters where appropriate.

Enquiries about participation were received from 57 nurses over a fourteen month period. During this period, information was provided to hospitals, participants and personal contacts for distribution. Further requests were also made to ensure sufficient families were recruited. From these initial enquiries, 20 families were recruited to participate in the study (35% of enquirers participated). Of the other 37 enquiries, 18 families did not meet the inclusion criteria for work and/or family circumstances, 3 families included an individual who met the

exclusion criteria for medication affecting sleep, 3 families included a husband and one or more children unwilling to participate, 5 families' personal circumstances changed, 7 families gave no reason for not participating and 1 family could not participate as sufficient participants had already been recruited.

4.6.2 Information for potential participants

When nursing staff interested in the study made contact via telephone or email, questions about the study were invited and the inclusion criteria were discussed. Subsequently, the potential participant pack (see Appendix 3) consisting of an introductory letter, a diagram summarising the stages and methods for participants and information sheets for the nurse, their husband and an appropriate number for their children were sent by post. A background questionnaire and stamped addressed envelope were included for completion. Wherever possible, potential participants were contacted by telephone (taking careful note of any information about shifts that week) before the potential participant pack was sent. Speaking directly to potential participants by telephone, giving a personal introduction to the research and an opportunity to ask questions verbally appeared to yield more positive and rapid responses than purely email-based exchanges.

The importance of husbands and children within the research was emphasised to nursing staff expressing interest in participating. Nurses were asked to ensure that information sheets were given to and discussed with their husband and children prior to the background questionnaire (Appendix 3.7) being returned. Two information sheets were available for children: one using language and concepts appropriate for younger children aged 8-11 years (Appendix 3.6) and one designed for children and young people aged 12-18 years (Appendix 3.5). However, unless information about children's ages suggested this was unnecessary, copies of both children's information sheets were supplied, and decisions about the most appropriate information for particular children were left to children and parents. It was emphasised both verbally and in written information that potential participants should not hesitate to ask if they had queries about the research and what taking part would involve.

Families were asked to indicate their interest in participating in the research by completing and returning a background questionnaire (see Appendix 3.7). This included demographic

and contact information about the nurse, their husband and children, together with work patterns. It was emphasised that this information would be handled in strictest confidence in accordance with the Data Protection Act 1998 and that completing the questionnaire in no way provided commitment to participate, nor informed consent to participate. On receipt of the background questionnaire, the author checked that the inclusion criteria were met, and telephone contact was made to answer queries, and if appropriate to arrange the first visit for obtaining informed consent, providing instructions for the two week period of daily data collection and conducting the initial joint interview with the nurse and her husband. Given the detailed nature of the information sheets, this phone call also allowed verification of participants' understanding of the scope of their involvement in the study.

4.6.3 Participants

Twenty families living in southern England participated in the study. Each family included a female nurse aged 30-54 years (n=20; mean 42.7 years ± 6.5 years), her husband (or male partner) (n=20; mean 44.6 years ± 7.2 years) and one or more co-resident children aged 8-18 years (n=34). 19 of the children were aged 13-18 years (mean 15.5 years ± 1.5 years) and 15 children were aged 8-12 years (mean 9.9 years ± 1.6 years). None of the individuals or families withdrew from the study after giving informed consent to participate.

Demographic characteristics of participants are provided by family in Appendix 11. Nurses' shift patterns during the two week study period are in Appendix 12. Information about nurses' and husbands' sleep quality and sleepiness from completed questionnaires is in Appendix 13 and information about nurses' health from completed questionnaires is in Appendix 14. Information about medication taken by participants during the two week study period are in Appendix 15. The characteristics of nurses, husbands and children participating in the study are summarised below.

4.6.3.1 Nurses

The sample included 14 nurses working 37.5 hours or more per week and 6 nurses working approximately 30 hours per week. 15 of the nurses were on an irregular rotating shift pattern which included earlies (approximately 07:00-15:00), lates (approximately 13:30-21:30) and nights (approximately 21:00-07:30) while the other 5 nurses were working twelve hour shifts

(approximately 08:00-20:00 and 20:00-08:00). The nurses ranged in experience from 1 month to 31 years post-qualification. All of the nurses had worked a variety of shifts including night shifts during their training with most of the nurses having worked on more than one shift pattern since qualifying. 4 of the nurses were Sisters (Band 6 or 7) and 16 were Staff Nurses (Band 5). Nurses were employed in a range of 13 different specialties and in 8 different hospitals. .

The Horne-Őstberg questionnaire results indicated that the majority of nurses were neither morning nor evening types (11) with none being extreme morning or evening types. The Pittsburgh Sleep Quality Index indicated that 65% of the nurses had poor sleep quality. Common themes identified from Standard Shiftwork Index questionnaires were digestive difficulties, shortness of breath and weight gain since starting night work and many nurses indicated that they were feeling under strain. Further details and discussion of these results are in Appendices 13 and 14.

4.6.3.2 Husbands

Nineteen of the twenty husbands were employed, with just nine in full time day time employment. The other ten husbands were employed working shifts or on contracts involving day and evening work. Three of the husbands were working rotating shifts including night work, one husband was working permanent night shifts (full time) and four other husbands had experience of night shifts. Husbands were employed in a variety of occupations and details are given in Appendix 11.

The Horne-Őstberg questionnaire results indicated that the majority of husbands were neither morning nor evening types (13) with none being evening types. The Pittsburgh Sleep Quality Index indicated that 75% of the husbands had poor sleep quality. Further details and discussion of these results are in Appendix 13.

4.6.3.3 Children

The mean age of participating children was 13.1 ± 3.2 years, including 15 pre-teenage children (defined as 8-12 years; mean 9.9 ± 1.6 years) and 19 teenage children (defined as 13-18 years; mean 15.5 ± 1.5 years), 15 females (6 pre-teenage; 9 teenage) and 19 males

(9 pre-teenage; 10 teenage). Ten of the children were at primary school, 14 were at secondary school, eight were at college and two were in full time employment. Six of those at college also had part time employment and four of those at secondary school also had part time employment.

In sixteen families (29 children) participating children lived with both biological parents, and in four families (5 children) participating children lived with their biological mother and their stepfather, and all have regular contact with their non-resident biological father. Just one participating child also lived with half siblings. While size of participating families ranges from one child (2 families) to five children (1 family), due to age-related inclusion criteria for children, ten participating families have just one participating child, while in six families two children participated and four families three children participated.

Beyond their home lives and family relationships, most of the participating children had considerable organising structures and responsibilities. Almost all of the participating children were in full time education, but many also had part time employment.

4.7 STUDY METHODS AND DATA COLLECTION

Participation in the study was in three main stages: the first visit, where informed consent was obtained, instructions given and the initial joint couple interview conducted; a two week period of daily data collection (which began immediately after the initial joint interview) including at least two consecutive night shifts worked by the nurse; and individual interviews with each family member (between 2 days and 3 weeks after the two week period ended).

4.7.1 Participation Stage 1 – First Visit

The first visit to the participants' home was arranged at a time when all potential participants could be present. Given the many different components of data collection, the personal details required and the importance of full informed consent being obtained from each individual before they became involved in the study, it was important for the researcher to speak directly with each individual. Additionally, preliminary testing of audio sleep diaries, food, drink and sleep logs and sleep and mood scales suggested that participants who had

spoken to the researchers felt much clearer about what was required and more committed to the study, as much more complete data were provided in these cases.

4.7.1.1 Obtaining informed consent

Following introductions, a summary of the study aims and what participation involves was given verbally, and potential participants were encouraged to ask questions. A diagram of stages and methods of the study (see Appendix 3.2) from the potential participant pack was used to guide explanations and to prompt questions. This discussion was particularly important because initial questions revealed that several children and some adults had not read the information sheets provided. After agreement to participate had been obtained, each person signed an informed consent form (see Appendices 4.1, 4.2, 4.3 and 4.4) which was witnessed by the researcher. To meet both best practice in conducting research with children (Alderson and Morrow 2004) and for evidence of parental consent also, each child or young person signed their own informed consent form, which was then countersigned by a parent and witnessed by the researcher.

4.7.1.2 Instructions for participants

After informed consent had been obtained, participants were given their Actiwatch or Actiwatch-L, Dictaphone for the audio sleep diary, and their two week booklet for the daily data collection (see Appendices 4.5, 4.6, 4.7 and 4.8). Labelled saliva tubes were also provided, with each day's tubes for the whole family in a separate bag. Full instructions were provided verbally. Written instructions including a daily summary were also given in each participant's two week booklet. Particular attention was given to ensure that children understood what they had been asked to do, and that any questions and concerns were addressed. This included clarification with both children and parents that, as far as possible, children should complete their own two week booklets. Following concerns about mothers reading and amending children's entries in their two week booklets (particularly food logs) through a desire to maximise accuracy, the confidentiality of these booklets was further emphasised and envelopes were provided so that each individual could place their booklet in a sealed envelope prior to collection by the researcher.

4.7.1.3 *Joint couple qualitative interview*

Following these instructions, children were thanked for their time, and a semi-structured recorded qualitative interview was then conducted with the nurse and her husband. During this joint couple interview, which lasted between 31 and 61 minutes (mean 48 ± 8 minutes), the nurse and their husband were asked to discuss their general opinions and experiences concerning household routines, their children, relationship, health, sleep, unpaid and paid work and night work specifically. Participants were reminded that the research had no specific hypotheses and that the researchers were interested in what they had to say, and that they were welcome to talk to each other during the interview as well as addressing the researcher. An example topic guide for the joint couple interview can be seen in Appendix 4.9. Conducting a joint interview before the period of daily data collection followed the approach of Venn and colleagues (2008) and enabled discussion about sleep and the organisation of their family's life before awareness of these themes had been heightened by collecting data among the timing of their sleep, evaluating the quality and their sleep and subsequent alertness levels and reflecting on feelings about sleep in audio sleep diaries. It seemed particularly important to conduct the joint interview before awareness had been raised to minimise discussion by the couple before the interview in ways which might have influenced responses in the interview.

4.7.2 Participation Stage 2 – Two week daily data collection period

Participants' collection of data on a daily basis over a two week period enabled recording of timing data and feelings at the time (thus greatly reducing recall bias) and enabled detailed comparisons between different shifts and detailed insights into daily lived experiences of night work.

The second stage of participation in the research was a two week period during which six types of data were collected daily. This two week period commenced immediately after the joint couple qualitative interview. These two weeks included a period of at least two consecutive night shifts for the nurse, as well as other shifts and time off work. This was agreed because physiological recovery from working at night may be achieved rather more easily after one and often two night shifts, and nurses frequently work two, three or more nights consecutively. Additionally, practical limitations around frequency of night shifts within

a rotating pattern and publication of rotas meant that two consecutive night shifts was an appropriate minimum. Data were collected daily for 14 days so that comparisons could be made between night work and day work as well as weekends and other time off. This enabled an adequate picture of participants' lives "normally" without night work as well as during periods of night work. In the biomedical tradition, including periods of night work and other shifts allowed participants to act as their own controls (Lockley, et al. 1999).

4.7.2.1 Two week participant booklets

Four separate participant booklets were developed to facilitate collection of data for each group of family members: nurses (Appendix 4.5), their husbands (Appendix 4.6), and their younger (Appendix 4.8) and older children (Appendix 4.7). Booklets were bound and included all the written information required from each participant during the two week period of daily data collection. The booklet included instructions for each data type, contact details for the researcher and assurances that she should be contacted in the event of any queries or problems, a summary of what was required each day, together with four pages of logs and scales to be completed on each of the fourteen days.

4.7.2.2 Activity levels and sleep/wake patterns

For the two week daily data collection period, nurses wore an Actiwatch-L, a non-invasive watch-like device which records the wearer's activity levels and light exposure. Husbands and children wore a similar Actiwatch, which recorded only their activity levels.

A review of 171 studies by Ancoli-Israel and colleagues (2003), concludes that actigraphy is increasingly widely employed as a cost-effective, non-invasive method giving valid indications of sleep patterns.

Actograms (a graph indicating activity levels hour by hour) were used during individual interviews to facilitate recall and discussion of activity and sleep patterns. However, analysis of actigraphy data is not included within this thesis.

4.7.2.3 *Cortisol and melatonin hormone levels from saliva samples*

Within chronobiology, cortisol and melatonin secretion levels are considered circadian markers which provide an indication of the circadian timing system. During periods of night sleep and wakefulness during the day, melatonin, a hormone produced by the pineal gland, usually increases during the evening reaching a peak during the early hours of the morning; while cortisol usually peaks soon after waking in the morning and promotes wakefulness (see Arendt 2005; see Dunlap, et al. 2004:315). Melatonin levels are "today considered the most reliable marker" of the body's circadian clock, with limited influences of other factors such as activity, sleep, meal timing, stress and menstrual cycles (Skene and Arendt 2006:347). Cortisol levels were also measured because they are also significantly affected by factors such as activity, sleep, meal timing, stress and menstrual cycles (p.347), many of which may show considerable variation between periods of day work and night work. In particular, cortisol secretion levels are also regarded as providing an indication of physiological response to stress (see Eller, et al. 2006; see Schulz, et al. 1998).

Saliva samples were collected each morning and evening by each participant during the two week study period. The majority of samples were collected just before going to bed and just after waking. While working night shifts, nurses collected their samples before leaving for work and after returning from work in the morning. Participants recorded the time of saliva sample collection in their two week participant booklets. Timings were provided to ensure comparisons between hormone levels on different days could take account of any significant changes in timing. It is important to consider the time of saliva sample collection because these hormone levels usually change during the day (including changes within a few hours).

Saliva tubes were given to participant families pre-labelled with the day, morning or evening and their participant code. Labels were printed in a different colour for each person, to facilitate identification. Tubes for the whole family for each day (morning and evening) were held in a separate clear plastic bag. Families appeared to develop their own systems for organising saliva samples – for example, one family member putting all the morning tubes in a bowl in the kitchen each day.

Each participant was asked to collect the sample themselves by spitting into a saliva tube. Participants were asked to ensure that each sample reached a depth of at least 1cm in the

tube. To avoid contamination of the sample with food, drink, toothpaste, blood or other substances, participants were asked not to eat, drink or brush their teeth immediately before collecting the sample. Filled tubes were stored in participants' domestic freezers.

4.7.2.4 Sleep quality and sleepiness

Sleep quality and sleepiness were assessed daily during the two week period, through participants completing two questions upon waking in the morning or from a main period of day sleep. A question from the Pittsburgh Sleep Quality Index asked participants to rate on a scale of four options the quality of the sleep from which they had just woken as "Good", "Fairly good", "Fairly bad" or "Bad" (see Buysse, et al. 1989) Secondly, on a nine point scale taken from the Karolinska Sleepiness Scale (Akerstedt 1990), participants rated their current sleepiness on a nine point scale ranging from "Very alert" to "Very sleepy." These ratings provide a comparable snapshot indication of participants' perspectives on the quality of their sleep and their sleepiness upon waking. These scales can be seen on the fifth page of each participant booklet in Appendices 4.5, 4.6, 4.7 and 4.8. Both the Pittsburgh Sleep Quality Index and Karolinska Sleepiness Scale have been employed in many studies and have been validated against other measures of sleepiness (Carter 2005; Czeisler, et al. 2005; Ingre, et al. 2006; Kaida, et al. 2006; Ohida, et al. 2001; Souza, et al. 2005).

4.7.2.5 Mood scales

A snapshot of participants' perspectives on their mood over the previous day or longer period since the last main sleep period was provided by completion of four visual analogue mood scales before going to bed in the evening or after a night shift. These mood scales have been used successfully in several studies concerning sleep (Lockley 1997; Revell, et al. 2006; Sletten, et al. 2009). Participants selected one of nine points between each of the four pairs of adjectives. This included choosing ratings from "Very cheerful" to "Very miserable", "Very calm" to "Very tense", "Very elated" to "Very depressed" and "Very alert" to "Very sleepy." Age appropriate language was employed for the scales for younger children. Two of the scales were numbered from very positive to very negative and the other two scales were numbered in the opposite direction to minimise unreflective completion. These scales can be seen on the eighth page of each participant booklet in Appendices 4.5, 4.6, 4.7 and 4.8.

4.7.2.6 *Food, drink and sleep logs*

All participants completed food, drink and sleep logs in the participant booklets each day during the two week data collection period.

These provided a record of all food and drink consumed each day, including a brief description, timing, where and with whom it was consumed and who prepared it. Older children and adults were also asked to give an indication of whether food and drink included alcohol or caffeine. Food and drink logs were used during individual interviews to facilitate recall and discussion of food and drink preparation and consumption patterns. However, detailed analysis of food and drink log data is not included within this thesis.

Sleep logs provided a record across 14 days of all main sleep periods and naps (whether planned or not) including timings for going to bed, trying to sleep, an estimation of time taken to fall asleep, timings for waking during the night or sleep period, waking up and getting up. These scales can be seen on the sixth and seventh page of each participant booklet in Appendices 4.5, 4.6, 4.7 and 4.8.

These logs give an indication of daily routines including food, drink, sleeping and wakefulness patterns for each member of the family, thus serving several purposes within the research. Firstly, they give an indication of each individual's patterns. This provides a picture of what may usually happen during periods of day and night work, which can be clarified during individual interviews. Additionally, information provided about specific days, nights, sleep periods and meals can be compared with other days and data types for the same person and for other family members, with clarification during individual interviews as appropriate. Information about specific periods enabled discussion about influences on sleeping and eating patterns (for example, alcohol, caffeinated food and drink, being at work at night). Finally, detailed information about the circumstances of food and drink consumption and about sleep and wake patterns for different members of the same family enabled follow-up questions to be asked and conclusions drawn about the meaning of these activities for individuals, couples, sibling and parent-child dyads and the family as a whole.

4.7.2.7 *Audio sleep diaries*

In addition to capturing snapshots about perspectives on sleep and mood through the scales using pre-set categories, qualitative data concerning sleep, mood and other reflections by participants were also collected each day during the two weeks. Following Hislop and colleagues (Hislop and Arber 2003c; Hislop, et al. 2005; Meadows, et al. 2005; Venn, et al. 2008) audio sleep diaries were used, with each participant recording into a Dictaphone verbal reflections on their sleep upon waking in the morning, upon waking from a main period of day sleep and at any other time when they felt they would like to record reflections. Although a list of prompts was provided in their two week participant booklet (p.4 in Appendices 4.5, 4.6, 4.7 and 4.8) participants were encouraged to record their own reflections and whatever seemed relevant, rather than structuring their recording as a disciplined answering of each question. This list of prompts was developed through reflecting on themes of interest following discovery during preliminary pilot work that children particularly often gave almost identical answers each day in a very rigid answering of each specific question. Each participant was provided with their own Dictaphone labelled with their name and containing an audio cassette labelled with their participant code to minimise inadvertent recording onto another family member's audio sleep diary. In one family, two participants recorded all of their audio sleep diary entries on the Dictaphone labelled for the other person. In another family, one participant made an sleep diary entry on another family member's Dictaphone. In both cases, the participants seemed unaware of this and it was clear from the voices and entry content which participant was speaking.

Daily audio sleep diary entries ranged in length from just a few words to several minutes' reflection. There was considerable variation between participants, with nurses most likely to provide detailed entries and several husbands also making detailed entries. Several children also engaged fully with the method and provided entries each day, while other children and husbands provided occasional entries when issues of note arose. One pre-teenage daughter and one husband from different families did not make any entries in their audio sleep diary.

4.7.2.8 *Sleep and health questionnaires*

To develop wider understanding of sleep for each nurse and their husband, each completed two questionnaires during the first few days of the two week study period: the Pittsburgh Sleep Quality Index and Horne-Őstberg morningness-eveningness questionnaire. The Pittsburgh Sleep Quality Index (Appendix 5) asks questions about the quality of sleep during the last month only. While drawing primarily on individuals' own memories, it also asks those completing it to consult their partner about aspects of their sleep about which they may not be conscious. The Horne-Őstberg morningness/eveningness questionnaire (Appendix 6) includes questions about sleep timing, alertness and preferences for the timing of sleep and intensive activities. Both questionnaires have been validated (Buysse, et al. 1989; Horne and Ostberg 1976) and extensively employed, and enable calculation of a score for each participant, facilitating comparison between study participants and also with other research studies. Additionally, answers to these questions were used as a starting point for discussion of sleep and its place within nurses' and their husbands' wider lives during individual interviews.

To gain an overall understanding of health and any changes since starting to work at night, each nurse completed the Physical Health and General Health questionnaire from the Standard Shiftwork Index (Barton, et al. 1995b; Folkard 1995). Both these questionnaires have been used individually and as part of the Standard Shiftwork Index in many other studies (see Barton, et al. 1995a; see Burch, et al. 2009; Trinkoff and Storr 1998). The questions used either have been drawn from existing validated health measures or have been shown to correlate well with other validated health measures (Barton, et al. 1995b). These two questionnaires from the Standard Shiftwork Index can be seen at Appendix 7.

Participants were given these questionnaires with the other materials at the start of the two week period of daily data collection and asked to complete them at a convenient time in the first few days and then to seal the completed questionnaires in an envelope. Each questionnaire took around ten minutes to complete. This timing was used to enable each person to provide responses without feeling rushed but before they might become more aware of their sleeping patterns once established in the two week period of daily data collection.

4.7.3 Collection of equipment and initial analysis

At a mutually convenient time at the end of the two week period of daily data collection, participant booklets, questionnaires, Actiwatches, Dictaphones and tapes and frozen saliva samples were collected by the researcher, either by visiting the participants' home or meeting at the nurse's workplace at the beginning of a shift.

Saliva samples were transferred to a laboratory freezer. As all saliva samples were analysed together so that the same reagents could be used to enable comparisons and for efficiency reasons, results concerning hormone levels were not used to inform discussion in individual interviews.

An initial stage of analysis was conducted in preparation for individual interviews. This involved entering quantitative data onto a database, transcribing joint qualitative interviews and audio sleep diaries and downloading actigraphy data. Additionally, Horne-Őstberg morningness-eveningness and Pittsburgh Sleep Quality Index questionnaire were scanned for key themes, actograms printed from actigraphy data and overall sleep and eating patterns identified for clarification with participants during individual interviews. Preliminary comparisons were made between data types, periods of night work and other times, and between members of the same family. Additionally, patterns and themes from the joint couple interview were identified and compared with data concerning these two weeks specifically. Ambiguous, unusual or otherwise interesting episodes and patterns were also identified for further discussion with participants.

4.7.4 Participation Stage 3 – Individual Qualitative Interviews

A final semi-structured tape recorded qualitative interview was arranged for each participant individually and was held between one day and three weeks after the two week daily data collection period ended. Following the approach of Venn and colleagues (2008), this final individual interview following the two week period of daily data collection enabled discussion of reflections on a specific set of night shifts, where awareness of usual practices had been heightened through daily data collection, clarification with participants concerning the importance of specific data, and discussion of more general themes concerning night work's influences for each participant.

To reduce the possibility of anxieties for children and questions from parents concerning what children said, interviews were conducted with both parents before interviews with children, unless it was not possible to arrange this due to participant availability. Reasons for children being interviewed alone were fully explained and in most cases this was agreed by children and parents. Three interviews with pre-teenage children were conducted with someone else present: in one case a friend was present throughout at the child's request; in another case both parents were present and reading throughout at the child's request; and in another case a father remained for the first few minutes until in his opinion, the child was settled into the interview. In each of these cases, the researcher felt that rapport between researcher and participant was reduced by the presence of other people and it was more challenging to engage participants in answering questions to meet the research aims.

By this stage of the study, each participant had met the researcher at least once and had also completed two weeks of daily data collection concerning their sleep and daily lived experiences in the context of night work. This enabled most participants to talk confidently about their experiences, to express opinions and reflect on the two weeks of daily data collection.

Questions in individual interviews explored feelings, experiences and opinions concerning night work and also included follow-up questions concerning data collected during the preceding two week study period. This included opportunities to compare experiences in different scenarios and also to reflect on participating in the research and any influences this may have had on their experiences of sleep and nurses' night work. Additionally, results of preliminary comparisons between data types were used to inform follow-up questions in individual interviews. These comparisons, together with other areas of ambiguity or incompleteness and also responses from the sleep and health questionnaires were then drawn upon to inform questions for individual interviews.

Participants were assured at the beginning of the interview that there were no right or wrong answers, that the researcher was interested in their experiences of night work and that this was their chance to say whatever they felt was important or relevant to them on this topic. Feedback on the experience of participating in the research and any suggestions for making participation easier and clearer for subsequent participants were also invited. Example topic guides can be found in Appendices 8.1, 8.2, 8.3 and 8.4.

Individual interviews lasted between 15-80 minutes (mean 40 ± 12 minutes). Table 4.1 below shows mean interview duration by family member grouping and gender.

Nurses' interviews lasted the longest on average (range 39-80 minutes; mean 51 ± 11 minutes). There appears to be little difference in interview length based on children's ages and gender.

These differences in mean interview length appeared to result from nurses talking in detail about their experiences of night work as well as the wider influences of this working pattern for their family lives, including for themselves, their husbands and their children. Husbands also talked in detail about changes to usual patterns of responsibilities, impacts on their wives and changes in their own and their children's lives. By contrast, although children mentioned impacts of night work on their mothers and other changes for themselves and their siblings and fathers, this generally involved less detail than that provided by their mothers and fathers.

Table 4.1: Individual Interview Duration

Family Members	Gender	Duration range (minutes)	Duration mean (minutes)	Duration standard deviation (minutes)	Number of Interviews
Nurses	Female	39-80	51	± 11	20
Husbands	Male	27-72	42	± 11	20
Teenage Children	Female & Male	20-45	34	± 8	19
Pre-teenage Children	Female & Male	15-47	32	± 9	15
Teenage boys	Male	20-45	33	± 8	10
Teenage girls	Female	24-45	35	± 7	9
Pre-teenage boys	Male	15-47	32	± 9	9
Pre-teenage girls	Female	20-45	31	± 10	6

4.7.4.1 *Incentive payment*

Due to the amount of time involved in participating, its distribution over several weeks and the need to involve three or more family members, an incentive payment was paid to each family on completion of participation. The incentive payment was mentioned on the letter to potential participant recruiters (Appendix 1), Recruitment advertisement (Appendix 2), Introductory letter to nurses (Appendix 3.1) and information sheets for nurses (Appendix 3.3) and husbands (Appendix 3.4). Pro rata payments would have been made if any participants or families had withdrawn from the study early. On the advice of the NHS Ethics Committee due to concerns about potential exploitation, the incentive payment was not mentioned on the information sheets for older or young children (Appendices 3.5 and 3.6). However, children were made aware of the incentive payment by their parents.

On completion of the individual interviews, a cheque for £150 made payable to the nurse was given, and the nurse was asked to sign to certify that they had received this cheque on behalf of their family (Appendix 9). All other family members were alerted to this procedure for the family receiving the incentive payment.

4.8 ETHICAL CONSIDERATIONS

4.8.1 Ethical approval and procedures

The study has been conducted in accordance with the British Sociological Association's (2002) guidelines, appropriate biomedical guidelines and current legislation including the Data Protection Act 1998. A favourable ethical opinion of the study was granted by Surrey NHS Research Ethics Committee (REC Ref 06/Q1909/17) and the University of Surrey Ethics Committee (EC/2006/60/SOCIO).

Although scrutiny and approval by two Ethics Committees benefited the study through clarifying the research objectives, reasons for employing particular methods, details of research methods, and securing assistance with recruitment from NHS Trusts and senior nursing staff, the author remains acutely aware that both Ethics Committees base their procedures around biomedical research methods, and that ethical research practice extends

far beyond favourable ethical opinions from Ethics Committees.

Several authors note that significant difficulties may arise where biomedical and social scientists involved in the same study have very different ideas about what constitutes ethical research practice (Hoeyer, et al. 2006; Webster 2006). Biomedical concerns about research ethics usually focus around protecting individual participants and usually involve principles of maximising benefit, minimising harm, justice and respect for autonomy (including informed consent), while social scientific perspectives on ethical research may be more concerned with impacts on society as a whole and on individuals within their social context (see Webster 2006). While there have been no such ethical conflicts for the researcher on this study, the rather "mechanical" approach required to fulfil all the requirements for submitting an application to research ethics committees in some ways makes this process look a little like a "technical procedure" (Webster 2006). In particular, it seems that the requirement to be as specific as possible about arrangements and questions to be asked in many ways appears to limit the ways in which the study can develop and the manner in which methods may be adapted depending on circumstances and following reflection on earlier phases of the research.

4.8.2 Ethical considerations in practice

The researcher was committed to conducting every stage of the study as ethically as possible for all concerned: primarily for participants, but also in terms of formal ethical processes, and with concern for the researcher's own safety and wellbeing.

Conducting research with multiple members of one family poses many complex ethical concerns, particularly where the research is primarily qualitative (see LaRossa, et al. 1981). Many of the family members participating in the research were children and young people aged 8-18 years, which raised further important points ethically (Lewis 2005).

Within this study, efforts were made to encourage individuals within each family to make their own contributions to the research, with the utmost respect for their privacy and relationships with other family members. Thus, each family member was treated as an individual research participant during data collection, with the lead being taken from the individual on their relationships with other family members. Questions asked were sensitive

to this.

This context informs discussion of ethical considerations, which are focused in relation to five main themes: informed consent and withdrawal; confidentiality and anonymity; participants' questions, concerns and difficulties; ethical considerations specifically concerning children; and outcomes for participants.

4.8.3 Informed consent

The study aims and methods were fully explained in writing to potential participants (see Appendices 3.3, 3.4, 3.5 and 3.6). This explanation included participants' right to withdraw from the study at any time without giving a reason and without prejudice. These explanations included arrangements concerning the incentive payment in compensation for participants' time and inconvenience, and provision of this payment on a pro rata basis in case of withdrawal from the study. A summary explanation was also given verbally and fuller explanations offered before written informed consent to participate was obtained from individuals in person (see Appendices 4.1, 4.2, 4.3, 4.4). Each participant was given a copy of their completed consent form, and a copy was retained by the researcher.

Although detailed information about the study aims and what participation involved were provided, due to the iterative nature of this primarily inductive research with a large qualitative component, it may be argued that fully informed consent cannot be obtained (Duncombe and Marsden 1996). To this end, information sheets for potential participants (see Appendices 3.3, 3.4., 3.5 and 3.6) were not specific but outlined the substantive area of focus, stating the study aimed to explore experiences of night work, including how nurses' night work may have influenced and be affected by husbands and children. Additionally, it was clearly stated that questions asked during qualitative interviews may vary depending how the interview progresses. Despite these attempts to gauge likely topics and outcomes and to acknowledge the iterative nature of this research, how individuals, couples and families would experience their participation in the study could not be predicted entirely. Due to this uncertainty, and also to facilitate provision of as full information as possible, contact details for the researcher and her academic supervisors were made available to potential participants.

The participant booklet (Appendices 4.5, 4.6, 4.7, 4.8) and letter thanking participants at the end of the study (Appendix 10) repeated the researcher's contact details and encouraged contact about any queries or concerns at any stage. Additionally, telephone calls were made the day before each arranged interview or visit to remind participants and to check that this was still convenient. A phone call was also made a couple of days into the two week period to check how participants were finding the study and to answer any queries. These phone calls were intended to provide participants with an additional opportunity to express any concerns or to indicate a wish to withdraw from the study.

The children's audio sleep diaries and individual interviews contained some insightful data on children's experiences of participating in the study. Almost all the children said they felt they had chosen to take part; one or two indicated some encouragement from a parent. This may reflect a perception among children that it would be wrong to refuse to participate after their parents had agreed to the family's participation (Alderson and Morrow 2004).

The incentive payment appeared to play a role for some children. When asked about their reasons for participation, it was mainly the younger children who mentioned the incentive payment and either their receipt of a portion of it or the value of the money to the family. This is significant given that at the request of the NHS Research Ethics Committee the incentive payment was not mentioned in the information sheets for children due to the Ethics Committee's concerns about the influence of this information. Younger children's mention of the money in this way suggests that this was influential in their decision-making; and also that parents may have been a more significant source of information about the study than the information sheets designed for informing children.

4.8.4 Confidentiality and anonymity

The researcher is committed to safeguarding participants' confidentiality and anonymity.

Actigraphic, salivary and other questionnaire and log data were identified only with a participant code. The author personally transcribed interview and audio sleep diary recordings, removing names and other identifying details (including places, hospitals and Trusts where participants live and work and any names mentioned during the interview), and inserting pseudonyms.

Participants' personal contact details are known only to the researcher and are stored in password-protected locations on University and laptop computers and in locked locations as hard copy, in strict accordance with current legislation, particularly the Data Protection Act 1998. All data, consent forms and databases linking names and participant codes are also stored securely, with data kept separately from documents containing names.

Particular efforts were made to ensure that the researcher did not communicate information between participants in the same couple or family and participants were asked to respect each other's confidentiality. During interviews, open questions were asked wherever possible, taking into account each individual's perspective on relationships with other family members.

Nurses may be concerned about risks to their employment should they express negative opinions about their work at night. Identifying details including names and location were removed from transcripts and because information about ages of adults and numbers, ages and gender of children are available, the specific NHS Trusts, and hospitals from which participants were recruited are not named in this thesis or any publications relating to the research.

Following the first few families' participation, three changes were made to maximise confidentiality. Firstly, envelopes were provided for sealed storage of each participant booklet in the family home prior to collection by the researcher. Secondly, to minimise questions about children's interviews and concerns among children about confidentiality, as far as possible, parents' individual interviews were conducted before children were interviewed. Thirdly, in relation to the safety of the researcher, home addresses where interviews were conducted were given to colleagues in a sealed envelope which was then destroyed by a colleague as soon as the researcher informed them that they had left safely (rather than the colleague being given the address directly). Apart from the first visit to the first two families, all visits were made by one researcher (the author). Whether visits were made by one or two researchers, each researcher had a mobile telephone with them at all times.

4.8.5 Participants' questions, concerns and difficulties

A procedure was put in place to handle any situations where participants may have become upset while talking about their personal experiences of sleep, relationships and night work. This may have occurred due to their participation heightening awareness of their circumstances. In line with the British Sociological Association's (2002) guidelines, participants were informed that they may stop the interview, ask for a break or ask for the recording to be stopped at any point during the interview.

None of the participants became upset during interviews. If this had occurred, the researcher would have given participants time and space to recover. If appropriate, the researcher would have discussed with the participant whether they wished to mention their concerns to other family members. In circumstances of distress, the researcher would not attempt to resolve these problems themselves or to counsel participants directly. If appropriate, information and contact details would have been offered about counselling and support services. If participants had felt particularly concerned about their sleep, they would have been offered contact details for the Director of Sleep Research at the University of Surrey's Clinical Research Centre, who could refer participants appropriately. If these contact details had been supplied, the participants would have been informed that were free to make contact with the Director of Sleep Research without indicating that they were participating in research.

4.8.6 Ethical considerations specifically regarding children and young people

It was essential that the range of power relationships which may be involved in negotiating informed consent and interviews with multiple members of a family, including children, were fully considered (Lewis 2005; Neill 2007). This focused around ensuring both parents and their children were fully aware of what participating in the study involved.

Where there was more than one child aged 8-18 years in a potential participant household, all these children were invited to participate, with each child receiving their own information sheet. Children only participated in the research if both they and their parents understood what their participation would involve and provided written consent to participate. Parents'

information sheets (Appendices 3.3 and 3.4) included an explanation of what their children's participation would involve and also mentioned that the researcher has obtained clearance through an enhanced disclosure from the Criminal Records Bureau (Disclosure No. 001118277671, dated 30th December 2005; Disclosure No. 001154572499, dated 16th February 2007).

Particular care was taken to ensure that children understood what participating involved. Age-appropriate language and concepts were used in written and verbal communication with children. Documents for younger children (Appendices 3.6, 4.4 and 4.8) were developed in consultation with primary school aged children and experienced primary teaching professionals. Documents for older children (Appendices 3.5, 4.3 and 4.7) were developed in consultation with young people aged 12-18 years. While documents for younger children were intended for ages 8-11 years and documents for older children were intended for ages 12-18, children and parents were able to decide which documents were more suitable for each child.

If children or their parents were uncomfortable with the children being interviewed alone, it was suggested that a sibling, friend or parent could be present for the interview.

4.8.7 Outcomes for participants

Although no direct risks and no direct and immediate benefits for participants were expected or identified, participants may have experienced some positive or negative consequences through their participation in the research.

In particular, in common with most qualitative research, some participants may have benefited from an opportunity to talk about their sleep, work, home responsibilities, and relationships in a confidential environment where they were able to talk without hindrance and without any particular course of action being suggested or endorsed (Bates 2006). Conversely, recording details, talking about and reflecting upon details of their routines and relationships may have made participants more aware of their circumstances, including the possibility of dissatisfaction. Several individuals and couples indicated that they had found the process of participating in the study very useful for reflecting on their situation and the ways in which night work affected their lives, responsibilities and relationships. A small

number of participants indicated that they planned to make changes to responsibilities for housework and to the types of food eaten as a result of participating in the study. One participant suggested that all families with a night worker should be offered a similar opportunity to that presented by the study to review their circumstances and the effects of night work on the rest of their lives.

This section has discussed the procedures followed to protect participants as far as possible and the limitations of these procedures and their ethical approach. Rapport developed with participants, the extent of their engagement in the study and consequences for findings are now discussed.

4.9 RAPPORT AND ENGAGEMENT

At all stages of participants' involvement with the study, the researcher aimed to be open, honest, friendly and yet professional. This included providing full information about the study in writing and verbally, but in an accessible and concise manner. Although information about the researcher beyond the study was not volunteered, where other questions were asked of the researcher these were answered openly.

Given the detailed nature of the research which included instructions and interviews over at least two meetings with each family member and multiple contacts with the family "gatekeeper" (the nurse), in several families participation in the research appeared to be closely connected with the researcher as an individual. Comments, apologies and explanations about the completion of written logs and audio sleep diaries suggest that these may have been written for the researcher, or with her in mind. This can be seen particularly clearly in audio sleep diary entries starting with "Good Morning Elizabeth", comments such as "Speak to you tomorrow" and the quotation below from a female nurse:

> *"...I don't think I have anything to add apart from I'm not sure whether I'm supposed to, I think I might have dozed off during my break overnight which was between four and six but I haven't written that in my diary but I'm not sure whether I should do so I'll give you a call and check that one – thanks very much."* (Nurse, 40s, Smith Family, Audio Sleep Diary)

This type of engagement was not restricted to women: some husbands addressed their audio sleep diaries to the author and one husband wrote "thank you" using a different phrase or language at the end of each day's entries in his participant booklet.

Although in any research (particularly where participants meet researchers, and particularly a specific researcher), information may be tailored according to perceptions of the researcher based on visual cues, characteristics and conversations, it seems this may be particularly important in research with multiple methods and where participation occurs in stages over time.

All of the participants appeared to engage fully with the research and to follow instructions provided. There did not appear to be any particular patterns by gender or age of children in relation to the extent of enthusiasm for the research. Some children appeared to be unclear about why their circumstances were worthy of research. This perhaps reflects the extent to which children become accustomed to and accept their parents' working pattern (see Chapter 6).

Although many husbands engaged in the research enthusiastically, with many expressing interest in the wider areas of sleep and shift work and some husbands making statements in individual interviews which would probably have not been uttered in their wives' presence, in general terms the nurses appeared to be engaged in greater depth in the joint and individual interviews than did their husbands. This may have been because the research was focused around nurses' working patterns and their families and the way in which nurses were recruited directly and then acted as gatekeepers to their families' participation. Many of the nurses also mentioned an affinity with the research process through their own dissertations and other study. Finally, there may have been a gendered effect in which the nurses felt able to speak candidly to a younger woman who could be informed of their insights and perhaps regarded in a role similar to an adult daughter, younger sister or student nurse.

The manner and organisation of families' participation in the study also appeared to reflect the unseen centrality of mothers' management of the household (see Chapter 3; Chapter 8). While this effect may be enhanced by the focus on nurses' night work and recruitment via nurses, most nurses commented in their individual interviews that they were involved in reminding their partners and children about tasks to be completed for the study. In some

cases, this involved setting out saliva tubes and audio sleep diary recorders in strategic locations. Several children apologised for missing out some tasks on certain days. This suggested that mothers may have encouraged children to ensure they completed all the tasks as requested, stating that any omissions would have deleterious effects on the study and therefore require an apology to the researcher. However, only one child directly acknowledged their mother's role in reminding them. This suggests that children are either so familiar with their mothers' reminders that they do not acknowledge this assistance, or that they are embarrassed about needing a reminder.

While several children talked about finding it difficult to remember tasks required as part of the study or found it boring after a while, many mentioned finding it fun or interesting and quite a few felt that they had become used to it and some were even quite disappointed when it finished. The majority of children, when asked how they had found taking part in the study overall mentioned something similar to "ok" or "all right." Several children appeared to be very interested in the study and asked detailed questions about the equipment, the study and its aims. Taking part in the study also appeared to prompt children to reflect on their daily routine and some commented that they had found it interesting to do so. Perhaps this interest stemmed from the conceptual contrast of study participation with studies at school (Edwards and Alldred 1999).

4.10 DATA ANALYSIS

This section discusses the methods employed in data analysis. Initially, each data type was analysed separately according to the procedures discussed in the sections below and key themes identified. Further analysis then followed, drawing on themes from different data types (see 4.10.4 below).

4.10.1 Qualitative data

Analysis of qualitative data is often considered to be complex given the large amount of data involved and the lack of clearly established procedures for conducting qualitative data analysis (Bryman 2006: 399) which may result in considerable "mystery" (Bryman 2006: xiii) and lack of clarity about how qualitative analysis is achieved in practice and how the processes employed may influence findings.

Audio sleep diary and qualitative interview data were transcribed in full by the author as Arksey and Knight (1996) recommend to facilitate familiarity with the data and its key themes. The software package *NVivo 7* was employed to manage and code the data.

Qualitative data (joint and individual interviews and audio sleep diaries) were analysed using several stages within the wider research design and which were intended to enable clarification of emergent key themes. This multiple stage process with constant comparison and revision of themes as they emerged employed elements of the grounded theory approach first proposed by Glaser and Strauss (1967). This approach was grounded because analysis was focused upon participants' accounts because of the importance within the research design of listening to perspectives of women, their husbands and children and drawing on these with the aim of developing understanding of night work's influences to move beyond the existing conceptual focus upon the circadian model of disruption and "impacts" for individuals towards theory reflecting the daily and nightly lived experiences of night work. Alongside this ethical and conceptual commitment to fully appreciating participants' perspectives, analysis also drew upon key themes within both existing shift work research and literature concerning gendered patterning, contemporary families and paid and unpaid work. However, the focus was grounded because key themes were identified by reading through data and then drawing upon literature to clarify the theme emerging, rather than by identifying key themes within literature and deliberately searching for these within the data.

The three-stage data collection process also enabled a partly iterative approach, as initial analysis (see 4.7.3) of joint interview data and data collected during the two week study period was conducted prior to final individual interviews, during which clarification of key themes could be sought as necessary.

At least five stages of qualitative data analysis occurred: notes made following interviews identifying immediately apparent themes; notes made during transcription of audio sleep diaries and interviews by the author, some of which led to clarification of important themes with participants in their final individual interview; identification of key themes within transcripts and coding these; comparing emerging themes between participants and families and amending codes as appropriate; drawing on sociological literature to clarify and refine the emerging concepts; before beginning to write about emerging theory and further clarifying this with reference to appropriate literature and other participants' accounts.

In using *NVivo 7*, a very large number of codes were developed and key themes within shift work and sociological literature were drawn upon to focus analysis upon the research objectives. The majority of coding was conducted by developing tree nodes where codes are held in relationship with other codes, but free nodes were also employed to enable identification of emerging themes which initially appeared independent and were transferred to tree nodes as their relationships with other codes was clarified through further analysis and consideration of more data. While coding was being carried out, new conceptual linkages and possibilities often presented themselves and these were captured by creating a "memo" (Robson 1993:386-387) of the key aspects of these thoughts in a notebook.

4.10.2 Saliva samples

Saliva samples were kept frozen (to preserve samples in the state as collected) and then analysed together by Dr Benita Middleton (due to specialist training and safety procedures). Following thawing, cortisol and melatonin levels were measured using immunoassay technology. This involved centrifuging samples to allow separation, and the addition of a radioactively labelled substance. Following reaction and incubation, a gamma counter was used to measure cortisol and melatonin levels (Stockgrand Ltd, University of Surrey).

Radioimmunoassay is not regarded as the gold standard for measuring hormone levels, but is "the most popular and widely used" method and has been validated by drawing on the gold standard method of gas chromatography-mass spectrometry (Skene and Arendt 2006:348).

4.10.3 Logs, scales and questionnaires

Data from participant booklets (sleep quality, alertness and mood scales, sleep timing logs) and data from the Pittsburgh Sleep Quality Index, Horne-Őstberg Morningness-Eveningness Questionnaire and nurses' General Health Questionnaire and Physical Health Questionnaire from the Standard Shiftwork Index were managed using SPSS 15 for Windows.

Sleep timing and data about the timing of saliva samples and the times when sleep quality, alertness and mood scales were completed were entered as decimal times using a conversion table created by the author. Decimal times (e.g. 07:45 became 7.75) were used

to facilitate analysis. Timings were converted back to times in minutes for presentation of results.

The scores indicated by participants for sleep quality, alertness and mood scales were entered into SPSS. Sleep quality descriptions (Very good, Good, Poor, Very Poor – see p.5 in each of the 2 Week participant booklets at Appendices 4.5, 4.6, 4.7 and 4.8) were coded with a number between 1 and 4. In each case, higher scores indicated worse sleep quality, alertness and mood scales. The third mood scale (Very depressed-Very elated for adults and older children and Very sad-Very happy for younger children – see p.8 in each of the 2 Week participant booklets at Appendices 4.5, 4.6, 4.7 and 4.8) was printed in reversed order to encourage participants to read and fully consider their responses. The coding for this third mood scale was reversed when entered in SPSS, so that higher coding indicated more depressed and sad scores.

Within each data type, comparisons were made for the same person between periods of day and night work and follow-up questions were used in individual interviews to further explore experiences.

4.10.4 Analysis of data collected by multiple methods

Following analysis of each data type separately and according to the usual procedures for this type of data, analysis was conducted across all data types. Given the inductive conceptual focus and the quantity of transcripts, qualitative data was analysed first. This enabled themes to emerge from the detailed qualitative data without reference to the results of quantitative data analysis. Following identification of key conceptual themes within qualitative data and initial drafting of qualitative analysis chapters (Chapters 5, 6 and 7), analysis of log, scale, questionnaire and saliva data was conducted.

Following initial comparisons between periods of night work and other times for this quantitative data, analysis drew on the importance of different temporal phases in understanding influences of night work which was emerging from the qualitative data and included comparisons between five different categories of night including before night work commences, the first night shift, the last or only night shift, the night after night work ends, and other nights. The results of these analyses concerning sleep and mood at different

stages of night work were then drawn upon to further develop and clarify concepts discussed in relation to qualitative data. This method of analysis across mixed methods broadly followed the approach of Moran-Ellis and colleagues (2006b), who "follow a thread" thematically between qualitative interview data and visual images captured in photography by participants. The analysis of qualitative data before quantitative data and the thematic focus enabled analysis to proceed within the study's primarily inductive and qualitatively oriented research design with an interpretive focus while also allowing these data to be supported and furthered by quantitative data.

The analysis across data types required substantial use of a note book in developing memos and key conceptual themes and also keeping track of the many appropriate versions of data files which were numerous in quantity and format (including SPSS, Excel, Word, *NVivo*, and some use of Prism, Sleep Analysis software and hard copies). While *NVivo 7* has the capability to incorporate multiple data formats, this was not explored due to the program already causing Windows functionality to slow considerably. These difficulties suggest that development of platform software such as *QlikView 9* to enable analysis through links and memos across data types and file formats would be invaluable for future mixed methods research.

4.11 CONCLUSIONS - METHODOLOGY

This chapter provides an overview of this study's methodological framework which is primarily exploratory and inductive and yet involves mixed methods which draw on both sociological and biological theory and provides both qualitative and quantitative data.

Details of the methods employed during sampling, recruitment and the three stages of initial visit and joint couple interview; two week period of daily data collection; and individual interview, are discussed. A summary of the analysis procedure for each data type and comparisons and thematic analysis across all data types is also provided.

The importance and ethical significance of conducting research with at least three members of each family are discussed. A favourable ethical opinion was obtained from two ethics committees and several other formal procedures and checks were completed successfully for this study. However, it is argued that such complex research involving detailed and

personal information from several members of the same family requires continual attention to potentially arising ethical implications.

Chapter 5 - Perspectives on night work from nurses' children

5.1 INTRODUCTION

This chapter is the first of four analysis chapters. Chapters 5, 6 and 7 draw on qualitative data from audio sleep diaries and joint couple and individual interviews to discuss lived experiences of night work from the perspectives of nurses' children, nurses' husbands and nurses respectively. Chapter 8 then draws on diary and saliva data to discuss the impacts of night work on the sleep and mood of nurses and their families. This focus enables the perspectives of each group of family members to be considered separately before the experiences of all family members are discussed together in considering ways in which night work affects families as integrated units in Chapter 9. Children's perspectives are considered first to allow their voices to be heard and considered without reference to their parents' perspectives on children's experiences. Given the relative lack of previous research in this area and their mention of both their children's and wives' experiences of night work, the second analysis chapter discusses husbands' perspectives. Nurses' perspectives are considered in the third analysis chapter. Chapter 8 follows, demonstrating how the insights from the qualitative data are supported and enhanced by diary and saliva data.

This chapter discusses children's perspectives on their mothers' work at night by drawing on qualitative interviews and audio sleep diaries from 34 children aged between 8 and 18 years. Further details about the age, education, employment and other activities of those participating and of their mothers' nursing, and family circumstances can be found in Appendix 11.

As discussed in previous chapters, the literature on shift work is predominantly negative. However, there has been little analysis of the consequences of night work on children and no previous research which has directly consulted night workers' children themselves. Therefore, data presented here are of particular importance because it is so rare to consult children on issues affecting the whole family, and in particular, their parents' work patterns.

This chapter focuses on children's accounts concerning their mothers' night work. This covers their experiences, perspectives and opinions on the ways night work intersects with their lives as individuals and on family life more widely. The chapter has two main sections. The first section considers direct impacts of night work from children's perspectives and covers changes affecting childcare, household tasks, food, sleep, and other activities. The second section considers children's perceptions of night work, including their reflections on the impacts of night work, their preferences and opinions more generally. While the focus is on consequences of night work for the children themselves, children also talk about night work affecting their siblings, mothers and fathers, and this chapter reflects that family focus.

5.2 DIRECT INFLUENCES OF NURSES' NIGHTWORK

This section of the chapter concerns children's perceptions of direct influences of their mothers night work on themselves. It considers how children talk about their mothers' night work affecting their daily lives, routines and activities. Children identify several influences of their mothers' night work on them. While some children talk unprompted about changes to their lives during night work, many of the insights from children which are included here are given only after children have been asked specifically to compare their daily lives during night work and at other times. This section opens with consideration of changes in who is with children at home and caring for them, before covering influences on food, sleep and activities.

5.2.1 Children's perspectives on mothers' absence, household tasks and "childcare"

Perhaps the most obvious change for children during periods of night work is their mother's absence. It appears that most of the other influences of night work for children stem from her absence. As a result, their father, siblings, grandparents, friends and friends' parents may instead spend time with and care for them; and daily routines and practices may vary because someone other than their mother is with them. Changes to children's daily lives may occur both directly because someone other than their mother is caring for them, with different roles and approaches; and because their mother is absent. The duration, timing and influences of these absences vary with night shift timing and children's evening activities and morning routines. For most children, their mother leaves after an evening meal and is

absent from home for the second part of the evening, overnight and for most of the early morning period. If children see their mother in the morning, it is usually only for a few minutes at home or on the school run.

As discussed in Chapter 3, research over several years indicates that while household tasks may be shared among family members, women (and especially mothers) continue to have responsibility for ensuring the work is done and usually do the majority of it themselves. Interviews with children both reflect this evidence presented in many studies (see Cunningham-Burley, et al. 2006; Dex 2003; Hochschild and Machung 2003) about gendered expectations and practicalities of mothers' responsibility for and management of household tasks, while adding that children themselves may also play an important role in completing household tasks.

This subsection considers influences of mothers' absence, including differing roles played by children themselves, their fathers, siblings, grandparents and other friends and relatives.

When asked about household tasks, most children immediately state that this is their mother's area and that she completes most of these tasks. When asked specifically, children then explain the tasks which they and other family members are expected to complete. A small number of children answer by listing their own tasks before explaining their mother's central role. Tasks which children are expected to complete often include tidying their bedroom, helping to prepare meals, and sometimes responsibility for a specific area, sometimes according to a rota with other siblings. Children's clear awareness of their mothers' responsibility for these areas, amid children's own educational and other priorities, suggests that these gendered expectations remain strong and persistent.

While children talk about changes during night work in who prepares food and in the types of food consumed (as discussed in 5.2.2), in contrast with their mothers' accounts, they do not mention non-completion or backlogs in other household tasks. Perhaps this further emphasises mothers' sense of expectation and responsibility, which means children do not need to concern themselves with tasks they have not been asked to complete, and also suggests that mothers' anxiety may exceed other family members' expectations about priorities in timing and thoroughness for completing these tasks.

More generally also, children express few concerns about their mother being away from home overnight while at work. Where concerns are expressed, these tend not to be for themselves, but for their mother's safety and wellbeing while working overnight, travelling and sleeping the following day; or include worries that their younger siblings or father may miss the mother. Interestingly, while some teenage children talk about their mother's absence affecting younger siblings more than themselves, because of a greater reliance or emotional attachment to their mother, others indicate that there is less influence on younger siblings because the maintenance of routine is more important than their mother being there:

> *"I don't think [younger brother] and [younger sister] take much notice of it, they just do whatever, but I dunno really"*
>
> (Teenage son, Wilson family, Individual interview)

Accounts of pre-teenage children themselves also reflect this range of influences: while a small proportion state or imply that they miss their mother in an emotional way which might not be expected for older siblings, many pre-teenage children state or imply that beyond her absence, they do not experience significant influences of their mother's night work upon themselves.

As might be expected, in contrast with their parents' perspectives, children do not speak about "childcare" or being cared for, but about whom they spend time with when not at school, college or doing other activities. Apart from weekends and holidays, children are not usually at home when their mothers are asleep during the day following night shifts, and so it appears this daytime sleep has limited influence on them.

While hardly any of the children talk about missing their mother while she is away at work overnight, it seems that her departure during the early evening may be experienced as disruptive. This may be due to her departure at a busy time with many conflicting demands. Meals and activities may require planning, preparation, carrying out, clearing away and transportation, children may be feeling tired and hungry, and their mother may be busy preparing both to leave home and to start work, practically, mentally and emotionally. This may mean that evening meals are more rushed or earlier or later than normal. This time of day may also be constructed as a family time, with mothers' absence having an important influence on that period, thus rendering it "not normal." Drawing on Southerton's (2003)

analysis of the coordination of family temporalities, it seems that nurses' departure for work renders an already "hot spot" even hotter. Much family activity already occurs at this time and requires co-ordination; and mothers' departure for work creates more pressure, and reduces time available to deal with the situation. This intensification of hot spots may be even more obvious immediately before the first night shift, as nurses anticipate this change in usual patterns and all family members adjust to the night working patterns.

5.2.2 Children's perspectives on fathers' roles during night work

While children are clear that mothers have primary responsibility for household tasks and for being at home when children are at home, most children indicate that their father is also involved to some extent in preparing food, ensuring that they are awake and ready in the morning, and other tasks. There appears to be a general consensus among children that fathers' involvement in these tasks increases during periods of night work, although the level of increase varies between households.

During their mother's night work, children appear to enjoy spending time with their father, and particularly enjoy this opportunity without their mother being there. As this pre-teenage daughter indicates:

> *"well it's good because you can see her [Mum] most of the day, umm it's quite good because I like spending quality time with my parents at different times – sometimes I like it together but other times I like it when it's just me and them, so when Mum's on nights I can spend quality time with my Dad, and because my Dad probably works more than my Mum, I can spend quality time with my Mum then"*
>
> (Pre-teenage daughter, Brown family, Individual interview)

It appears that this time together gives both fathers and children opportunities to spend time together, often in a more relaxed manner than would be possible if their partner or mother were present. This is supported by mood scale data indicating that children, and especially teenage children, feel more calm and less tense in their mothers' absence on night shifts (see 8.5.3). Children talk about fathers both appearing more relaxed, and relaxing usual

expectations and rules. This may include allowing them to spend longer relaxing with television or computer games and not enforcing bedtimes as strictly as their mother might:

> *"Dad doesn't like, Dad's not as strict as Mum like, when it comes to going to bed and stuff... umm like when Mum's on a night sometimes like umm Dad says – like I say to Dad "Oh can I go on the Play Station for a bit longer?" and Dad's like "yeah fine as long as you don't tell Mum" ... I think sometimes Dad's annoyed that like Mum isn't here, he's got like no one to talk to... normally when Mum goes to work like, he usually has like a glass of wine and a beer"*
>
> (Pre-teenage son, Smith family, Individual interview)

This relaxation of demeanour and usual rules during mothers' absence at work reinforces the gendered and central role of mothers in household management. It also follows Duindam (1999) and Marsh and Musson's (2008) indications that giving men space to undertake tasks usually associated with women allows them to develop their own parenting style, which is also likely to be gendered. Indeed, while the relaxed expectations and rules which many children report during night work are regarded by children as not usual and as contrasting with those usually exercised by their mothers, there are also some indications that caring for children during periods of night work allows fathers more influence over expectations and rules for their children more widely:

> *D* *...Dad's really nice to me sometimes about going to bed I'll say "Can I watch something on the telly for half an hour instead of reading?" and he lets me but then I have to go straight to sleep*
> *I* *yes so is Dad saying that when Mum isn't around or?*
> *D* *yeah usually – she does know that we do it sometimes*
> *I* *so it's allowed?*
> *D* *yes*
> *I* *so is that more at weekends or?*
> *D* *yeah I have done it on weekdays before*
>
> (Pre-teenage daughter, Brown family; Individual interview)

Here, the daughter mentions that her mother is aware that her father applies different rules and does not prohibit this when the father has responsibility. The daughter's comments that "Dad's really nice to me" and that he "lets me" watch television, together with the interviewer's question about whether such behaviour is "allowed" imply a shared understanding that the child's mother ultimately decides bedtimes and their appropriateness. Thereby, periods of night work where the father has responsibility for the daughter and her younger sister are understood as time off from the usual system, with the mother ceding control in these matters to the father.

This suggests that while children sometimes enjoy more relaxed time with their father, they remain aware that their mother's expectations and rules remain dominant in their minds, and while they may not like certain aspects, they are aware that their mother may apply rules and expectations more consistently.

However, it seems that while fathers with sole childcare responsibility during periods of night work may be more relaxed and have fewer expectations of their children, some fathers on some occasions may be more strict with their children and have higher expectations of their behaviour. For example, some children talk about their fathers not allowing them to play computer games to the same extent as mothers, because the fathers wish to use the computer for their own leisure, or because they are expecting children to contribute to the completion of household tasks. For some children, a discrepancy between usual expectations and these higher demands may be frustrating, particularly as their mother is not available to support them:

> *"mmm well not really. Apart from the fact that if she's sleeping she goes to bed in the morning, so I'm like rr I can't ask her, and sometimes my Dad won't let me do things that my Mum does, so when she's in bed I'm like grr I wanted to ask her that, she might have said yes and my Dad will shout at me if I wake her up"*
>
> (Pre-teenage son, Evans family, Individual interview)

From children's perspectives, one reason for some fathers being more strict appears to relate to anxiety about balancing their own and children's relaxation with a concern that their partner should not return home from work and immediately begin cleaning, tidying and washing. Some children refer to their father's expectations that they should contribute by

helping with tasks which might not normally be their responsibility, such as washing or mowing the lawn:

> *"it's kind of like I can't play all the time, I can play on the X box and go next door, then I want to eat dinner and then I'm gonna go and play with my rats and then I'm gonna read my book. He'll say "You haven't done anything all day, can you wash up? Can you do like mow the lawn? Can you just like you know help out a bit?" whereas Mum if she'd cooked the dinner and it was only us home she'd say "Can you wash up please?" you know, but it's kind of [stepfather] thinks we should get involved, a little bit of help... it depends what mood he's in, if he's in a good mood he'll want us to like be involved and together and stuff, but if he wasn't in such a good mood then he might say "Can you do this? I'll do that", I'll relax a bit to a point"*
>
> (Teenage son, Taylor family, Individual interview)

Children also talk about how their father's desire to ensure certain tasks around the house are completed may accompany feelings of stress, although it is not clear whether children attribute this to anxiety about completing the task, anxiety about ensuring children contribute to its completion, or worry about their wife's reaction if they fail to ensure it is completed. Some children also indicate that having responsibility for them and their siblings may be stressful for their father anyway, as they may be demanding, and he does not have their mother's immediate support:

> *"yeah he sort of, I don't know – he like does a lot of things to like keep himself busy I'd say, because like when Mum's not here he'll take like an hour doing the washing up, like when we've got a dishwasher anyway and stuff like that, and what does he do? Oh he just seems like a bit different, I'm not too sure how... I'd say normal is like when Mum's here, like whether she's worked or not on that day, and then Dad comes home from work and then there's [younger brother] and [younger sister] and me like all creating havoc and then there's two parents to sort us out rather than just Dad who just sits there and doesn't really say anything [laughing]"*
>
> (Older teenage daughter, Smith family, Individual interview)

Although this daughter draws a comparison between two parents and one parent being present, it is clear from her interview more widely that she considers her mother to deal more confidently with herself and her siblings than her father does when her mother is at work at night.

5.2.3 Comparing mothers' and fathers' approaches to parenting

It appears that mothers' work at night and fathers' associated responsibility for the household and children during her absence provides children with an opportunity to compare how their parents interact with them. Several children refer to differences that they have identified between their father's and their mother's parenting style, based on spending time with each parent individually, while the other is at work. Although there are differences between families and between children, there are two main themes. One theme is a familiarity with their mother's parenting style and regarding this as a norm with which to compare their father. This appears to reflect a gendered norm of the mother as primary care provider and source of comfort for children. When comparing their parents, children indicate that mothers may be more consistent and fair, whereas fathers sometimes may be more lenient, but then may be also more strict beyond a certain point. This is exemplified by this pre-teenage son's comments:

> *"I think sometimes I can get away with more things with Dad and sometimes I can get away with more things with Mum but... Dad, Dad doesn't have as much patience as Mum but he's not as strict...he gets angry if I take a long time to do things whereas Mum wouldn't get so angry...she makes most of the rules so"*
>
> (Pre-teenage son, Jackson family, Individual interview)

Overall, it seems that children enjoy spending time with both parents and are aware that while their mother may enforce certain rules and expectations, fathers may be more likely to relax rules and allow children to enjoy themselves, but are also more likely to get angry or to have high expectations of children at other times. For example, while most children talk about their mothers asking them to undertake certain tasks within a specified timeframe which does not require immediate action and later checking that these are completed, some children talk about fathers asking them to undertake tasks immediately while mothers are at work, to ensure she does not feel burdened when she returns.

Children's perspectives suggest that fathers' unfamiliarity with this role and lack of overall responsibility for household tasks and childcare may lead to lack of consistency, with both more leniency and more enforcement of expectation than mothers. Drawing on Southerton's (2006) analysis of "hot spots" and "cold spots" within family life, these perspectives suggest that in comparison with mothers, fathers may accentuate both extremes, making "cold spots" colder by encouraging further relaxation, and making "hot spots" hotter by leaving tasks undone until they appear urgent. Thus, times which are normally fairly relaxed when mothers are present and are classified as "cold spots" become even more relaxed where fathers have responsibility in the absence of mothers and their reminders about the need to complete certain tasks. As cold spots become colder, it seems that hot spots become hotter: during busy times where fathers have responsibility, the pressure appears to rise and things become busier. This may be partly due to fathers' unfamiliarity with managing this time period, and also because tasks not completed during the colder than usual cold spot now urgently need completing.

5.2.4 Older siblings' roles during night work

Some older siblings mention being responsible for younger siblings at home in both parents' absence. Older siblings appear to accept this task which is usually undertaken for relatively short periods of time when neither parent is available. Interestingly, no indication is given in these interviews that the task is seen as onerous, despite the need to ensure that they are at home, available and able to supervise younger siblings when required. For example, this may involve changing usual patterns of behaviour so that they are able to take responsibility:

> *"umm normally when just [Stepdad]'s here in the mornings he tends to get up a bit later, the little ones are down here and they're sort of watching telly, and I try and get them a bit ready while or while everyone else is getting up, but yeah, it doesn't make much difference really... she's here sleeping all day so if I'm looking after the little ones while she's sleeping, it's quite a challenge to keep them quiet all the time but well it's probably harder for her at the weekends, because if she's got the little ones that potentially makes quite a lot of noise umm but it doesn't make much difference for me really other than the fact that I'm either looking after them or here instead of at school"*
>
> (Teenage son, Short family, Individual interview)

Interestingly, however, younger children do not offer comment on their experiences when being cared for by older siblings. Perhaps this is because it is usually only for short periods, or because they are accustomed to older siblings' presence when parents are there also.

5.2.5 Grandparents' and other family members' roles

Several of the participating families have grandparents or other members of their extended family living reasonably nearby and children talk about spending time with these family members when both their parents are unavailable due to work. Some children say they enjoy spending time in a different environment, but some children, especially when they are a little older, appear less than enthusiastic about having to spend time away from home. This seems exacerbated if grandparents fail to meet their expectations about treating them in a manner appropriate to their age:

> *"yeah like practically constantly feeding me, except most of the time I usually just say "No, thank you" ....usually they say "You're a growing boy" but I'm tempted to say "Yeah not in height but in width""*
>
> (Younger teenage son, Harris family, Individual interview)

> *"...the other day I wanted to invite [friend] back so I had to make sure I could go, like I didn't have to stay round my grandparents or anything like that"*
>
> (Pre-teenage daughter, Wilson family, Individual interview)

It seems that any negativity which children feel about spending time with grandparents may be due to the restrictions which this may place on their independence and sense of individual responsibility. Reflecting on this diminished independence and responsibility in the care of grandparents, perhaps older siblings' acceptance of parental requests to care for younger siblings is motivated by the responsibilities which this brings.

While children are familiar with different childcare provision, several children express likes and dislikes for different patterns. In particular, being cared for by grandparents or their father prompted several children to comment on differences between these experiences and care by their mother. Perhaps this is because children's acceptance of normative care by

their mother prompts questions about contrasting experiences when cared for by other family members. Most of the participating children appear to construct care by their mother as a gendered norm with which to compare care by others:

> *"well umm well, I feel quite left alone when only [younger sister] and Dad are there, cos I get quite scared in the house at night when there's only Dad, [younger sister] and me, but when Mum's at home I don't feel that scared"*
>
> (Pre-teenage son, Lowe family, Individual interview)

> *D* *"...she [Mum] comes back in the morning [after a night shift] and I'll be up and then I'll say hello and she'll go back to sleep, and we couldn't like have a Saturday with her or something*
> *I* *yeah, so she's not kind of around?*
> *D* *no cos then she's not around during the day so we can't do stuff*
> *I* *yes, so are there other things that you can do when she does nights?*
> *D* *no cos we'd have to go outside with my Dad and that's not that much fun, cos we go into [nearby town] and it's just me and Dad and [younger brother] and like, hopefully no one's there so they don't see me with my Dad!"*
>
> (Pre-teenage daughter, Wilson family, Individual interview)

In both these examples, children are conveying their implicit understanding of their mother's presence as important to their sense of normative shared family time. The children in these two examples report that when being cared for by their father alone in their mother's absence due to night shifts, they feel fear and embarrassment respectively. This demonstrates the importance of their mother's presence for reassurance, in her availability to provide care if needed, and in constructing "proper" family leisure time.

5.2.6 Changes in food and meals

As with other household tasks, almost all children indicate that their mother has primary responsibility both for purchasing and preparing food. However, they also indicate that they themselves and in several families their father also regularly prepares or contributes to

preparation of food, and may assist in its purchase. In many families, children (especially teenage children) talk about often preparing at least a proportion of their own breakfast and midday meal, although children also talk about mother's role in managing this or preparing food for them. It seems from children's reports that the majority of evening and weekend meals are planned and prepared by their mother, although several children mention making a small contribution, such as preparing vegetables or setting the table.

During periods of night work, children report some changes in food and its preparation. While in about half of participating households mothers prepare evening meals for the family after waking from day sleep, children's accounts suggest that perhaps half of evening meals during night work may be prepared by fathers or children, sometimes together. However, some children also report that their mother will plan and leave notes and prepared food and/or ingredients for their children and husband to prepare. Children in nearly all households also comment that food eaten in the evening is likely to be simpler and less healthy during periods of night work, and that the likelihood of having takeaway food is higher:

I *are there other things that are different for you?*
S *umm except for the meals now*
I *so the meals, what's different about the meals?*
S *when Mum like umm cooks, she cooks like spaghetti Bolognese and things like that, whereas when she's doing nights we get like sausages and mash and like micropizza and chips*
I *yeah, so is that good or is that bad?*
S *it's good for a change, but if she kept on working nights it would get boring*
I *yeah?*
S *yeah*
I *so you'd find that boring – is that 'cos it's the same kind of thing?*
S *yeah*

(Pre-teenage son, Smith family, Individual interview)

It appears that, as with changing expectations and rules when alone with their father in their mother's absence at work, while they welcome the change in food, and being able to eat

things which might not be permitted if their mother were not working at night, it would be boring to eat like this all the time.

As with evening meals, some children mention that they may be more likely to prepare their own breakfast or lunch while their mother works nights, although this is not always the case, and it appears that the type of food is likely to remain similar. Some comment on mothers' amazing abilities to "find a way to" complete these tasks as well as working nights, "cos she's Mum" (Pre-teenage daughter, Wilson family).

5.2.7 Changes to sleep

The children in this study range in age from 8 to 18 years and there is a variety of educational, employment and leisure activities in which they are involved. This creates several sets of structural factors which strongly influence the timing and pattern of sleep for these children. This section considers how going to bed and waking up may be influenced by mothers working at night, before discussing sleeping elsewhere while their mother is absent from the home overnight, and finally considering children's perspectives on their mothers' sleep during periods of night work.

There is considerable variation in children's usual bedtimes, with some children of similar ages in different families going to bed at very different times. However, many children of all ages talk about themselves and their fathers going to bed later and getting up slightly later when their mothers are working at night.

5.2.7.1 Going to bed later

As discussed earlier in this chapter, children often mention that when their mothers are absent at work overnight, their fathers are more relaxed in the evenings, both in themselves and in relation to their children. While younger children are likely to have specific bedtimes and older children are more likely to choose when to go to sleep, it seems that fathers being more relaxed has an influence on bedtimes. Although a few children say there is no difference in sleep or sleep timing and a small number indicate that they or their father may go to bed a little earlier during night work, a large proportion of the interviewed children say that they and their father go to bed later. This is corroborated by children's sleep log data

which indicates going to bed and trying to sleep times being between 10 and 27 minutes later on average when their mother is absent from home on night shifts compared with when she is present (see 8.2.3).

It seems that going to bed later may occur through a two part process which involves their mother being absent and their father being solely responsible for their children and their activities in the evening and overnight. This is illustrated by a teenage daughter:

> *"I sometimes probably stay up later 'cos just 'cos she's not there to nag me to go to bed kind of thing... my Dad will probably tell me to go to bed, but not as soon as my Mum would like"*
>
> (Younger teenage daughter, Smith family, Individual interview)

Thus, during night work, not only are her mother's reminders about going to bed avoided; but her father will tell her to go to bed later than her mother would consider appropriate. The prominence of this pattern when fathers are responsible for children during mothers' night work is illustrated by a pre-teenage son's comments:

> *"I usually go to bed a bit later... umm I usually feel sleepier when I wake up... Mum's usually stricter about when I go to bed... he'll tell me to go to bed a little bit later....umm around quarter of an hour I think"*
>
> (Pre-teenage son, Wilson family, Individual interview)

Here, the perspective of the teenage daughter in the other family is echoed: the mother's influence about suitable bedtimes is absent, and the father is more relaxed about bedtimes. Although the estimated delay in bedtime is only fifteen minutes, the son reports feeling sleepier upon waking. This is supported by analysis of sleep log data, which suggests that fathers and teenage children go to bed significantly later during night work, and that pre-teenage children may also go to bed a few minutes later (see Chapter 5).

This more relaxed approach by fathers and its consequences are revealed in more detail by the pre-teenage son in the Evans family:

"... my Mum and Dad agree on one thing and that's my bedtime! [laughing]... well if he's on his own, he's either downstairs doing ironing or watching TV, or he's downstairs on the computer and he doesn't really come up very much it's only if he's doing the ironing he brings up the washing... most nights I don't get caught out when my Mum's on nights... when my Mum is here she generally irons more quickly so she comes up more times, so it's more likely that I'm gonna get caught... my Dad sometimes doesn't bother, he tells me to go upstairs once and thinks I've gone upstairs, but I haven't... and then about half an hour later he comes into the room I'm in and starts shouting at me, so I get about half an hour more time"

(Pre-teenage son, Evans family, Individual interview)

While the parents may agree publicly on the son's bedtime, he is fully aware of the different ways in which his parents interpret and manage bedtimes. The son may be told to go to bed at the same time, but due to his parents' differing skills and approach, the son is able to stay awake around half an hour longer when his father has responsibility. The son attributes this to his mother's more frequent checking on him (which he partially attributes to her greater speed and familiarity with ironing); and his father's more relaxed demeanour which prioritises his own leisure time, but, as discussed earlier, may involve suddenly becoming angry about children's non-compliance with expectations which had only been stated once.

These accounts indicate that children in this study are likely to go to bed slightly later during periods of their mothers' night work. These accounts are corroborated by children's sleep log data (see 8.2.3 and 8.3.2). Additionally, they emphasise the centrality of mothers in maintaining the usual rhythm of family life, and the gendered differences in parenting style which are so apparent when fathers assume responsibility during periods of night work. Children's accounts indicate that as with other aspects of their care, their father's more relaxed approach may allow later bedtimes than usual even if specific times have been agreed between their parents.

5.2.7.2 Getting up later

Apart from pre-teenage children who may wake early anyway, children in this study talk about school, college and employment usually determining their waking times. Children's

accounts suggest that in most households, unless either parent is at work, both parents will spend time with children in the early morning and assist and encourage children in their preparations for the day ahead. However, again, there are gendered differences in this, and while there are variations between families, children's perspectives suggest that while fathers may be more involved in the morning than after school and in the evening, mothers usually have overall responsibility for ensuring children are awake, ready, have eaten breakfast and have packed lunches.

During periods of night work, most mothers do not return home until just before or just after children depart for school, college or work, and so this period is the father's responsibility. Children's accounts suggest that this time may be either more relaxed or more tense during mothers' absence. As with bedtimes, it seems that fathers are likely to take a more relaxed approach, which may quickly become more strict if necessary:

> *"...sometimes it's hard to get [older brother] out of bed 'cos Dad doesn't really shout, he's not really as strict as Mum – he can get strict if you really push it to like he gets strict..."*
>
> (Pre-teenage daughter, Jackson family, Individual interview)

> *"quite hard normally my alarm'll go off and I'll put it on the snooze thing and just carry on sleeping and I do it like 5 times. Mum'll come up and say "Get out of bed"... yeah my Dad'll shout and my Mum'll, just like I'll pay more attention to my Mum too... yeah he normally gets up later as well"*
>
> (Teenage son, Wilson family, Individual interview)

Alongside children's perspectives of mothers as consistently strict and fathers as less consistent and both more lenient and more strict than their mothers, several children report or imply according more importance to instructions from mothers. Perhaps this results from greater familiarity with their mother's approach and greater trust and respect because of this familiarity and consistency. Greater certainty about likely outcomes of non-compliance may also play a role.

5.2.7.3 *Spending the night away from home*

Some children talk about spending the night away from home while their mother works at night. This may be at grandparents' or other close friends' or relatives' houses nearby and usually occurs when the father is also working overnight or in the late evening or is away from home for another reason. There were a couple of occasions during the study where children appeared to arrange to spend the night away from home during their mothers' night shifts even though this was not essential. This may be partly coincidence, or it may reflect an uneasy relationship with a stepfather or desire to be away from home while things are not as usual. However, children also talk about how being away from home may influence their sleep:

> *I* *and how does it compare, sleeping at nana's and sleeping here?*
>
> *S* *umm at nana's, there's usually this kind of sofa bed thing that flips out umm but there's three cats so instead of one they sometimes sleep on the bed but not very often, umm I think it takes me longer to get to sleep, but I sleep better*
>
> *I* *ok, any ideas why that might be?*
>
> *S* *umm no idea. I like a heavy duvet that might be why, 'cos it's so big 'cos it's a double one it's so heavy. I like that umm, I just like being kind of snuggled so that might be something to do with it, and it might be also 'cos it takes longer to warm up and stuff, I dunno really*
>
> (Teenage son, Taylor family, Individual interview)

Therefore, children's sleep may be affected by different expectations and being in a different environment where they may need to share a bedroom or sleep in an unfamiliar and perhaps less comfortable bed which might be in a living area. The son quoted above also mentions a sense of reduced independence when staying at his grandmother's as she wakes up later than he usually would, but she prefers to wake him rather than him setting his own alarm clock.

5.2.7.4 *Awareness of impacts of night work on mothers' sleep*

While discussing the influence of night work on sleep from children's perspectives, it is important to note children's awareness of the influence of night work on their mother's sleep. It seems that this awareness stems both from their mother's direct warnings that they are tired, and also from children's experiences of this:

> "*she doesn't do as many nights [now] which is good for the whole morale of the family, so she's not really groggy and moaning*" (Teenage daughter, Davis family, Individual interview)

> "*umm I think sometimes she likes doing them, but when she's got, like she has three in a row sometimes and then she gets really tired 'cos she doesn't sleep well, I don't know what it is, she's just a really light sleeper and then she gets really tired and then she gets really grumpy and that makes all of us grumpy, 'cos Mum's like holds everyone together in this house*"
>
> (Teenage daughter, Moore family, Individual interview)

Children also demonstrate awareness of a clear link between mothers' tiredness and related changes in mood, and how the whole family feels. This again illustrates the gendered centrality of mothers within family life: in completing household tasks, in ensuring children and fathers meet their responsibilities, and in emotional terms.

5.2.8 Changes in activities

Most of the children in this study have busy lives away from home, with full time education for almost all of them, and many additional activities in the evenings and at weekends, including employment, organised musical, sporting, dramatic and military activities, leisure and socialising. Many children also talk about spending time at home with friends, family and extended family.

5.2.8.1 *Scheduling activities*

Many of these activities require transport, and even for teenage children or if using public transport, this may involve planning and co-ordination with other family members and their responsibilities and activities. Mothers' shifts, and especially their night shifts may have influences on whether children can participate in certain activities and the arrangements required to permit this.

Children are generally quite aware of their mother's shift patterns and several talk of their visibility on kitchen calendars, as well as their mother's verbal reminders:

> *"she makes me aware of what shifts she's doing! "Oh I've gotta work this day this day, this day, this day" and then she has like six days off so... just I know she's working nights 'cos she's either in bed or working nights or moaning about having to work nights quite a lot of time"*
>
> (Teenage son, Robinson family, Individual interview)

While their mother being away overnight can provide opportunities for older teenage children to spend time socialising, especially away from home, their mother's sleeping during the following day may present restrictions on activities for many children.

5.2.8.2 *Daytime following mothers' night shifts*

Mothers sleeping during the day following night shifts, especially at the weekend and in school holidays is described as negative by children for several reasons. While some children are relatively content to remain at home quietly for a few hours, others talk about their frustration at this imposition. In contrast with other weekends and holidays, they are unable to have friends over and they must remain very quiet without shouting or playing music while their mother sleeps. Indeed, even activities outside home may be affected by the need not to wake their mother when they return:

> *"the worst thing is when she's worked weekends, like last weekend she worked Saturday - this is the worst - she worked Saturday night and I had football*

Sunday. She worked Saturday night so she's asleep all Sunday, that means I can't go in the shower, I'm muddy for the rest of the day, because she's asleep, so that's the worst 'cos I can't shower and none of my mates can come in, you have to be silent everywhere, I hate it, it's annoying"

(Teenage son, Field family, Individual interview)

While in most families, mothers' day time sleep following night shifts did not have such pervasive influences, this example demonstrates the extent to which families will support mothers' sleep needs following night work. It is notable that even though this teenage son expresses annoyance to the interviewer, there was no mention of attempting to flout the expectation of no showering while his mother was sleeping and there was no indication of attempting to gain support from siblings or negotiate this with his parents.

Even after their mother has woken, children also talk about the need to remain on best behaviour as they are aware from past experience that she may get cross more quickly due to her tiredness. Additionally, as an alternative to remaining quietly at home, several children talk about having to leave the house with their father while their mother sleeps. This appears to be seen as negative by children, because of the requirement to go out somewhere, and also because this is necessarily with their father and without their mother.

"she finds it ok but sometimes when it's in the day, when we're going to do something exciting, like go to the shopping centre in [town 7 miles away] she'll say "I'm afraid I can't come [own name] and [younger sister]" and then I get quite annoyed... well I don't get annoyed but I just feel like ahh I just don't feel very happy about it I do but"

(Pre-teenage son, Lowe family, Individual interview)

The account of this son suggests that some feelings about influences of night work may not be expressed to avoid worrying Mum about any possibility of changing her sleeping pattern or the ways in which her working pattern affects her children. This implies doing emotion work to exercise personal control over his own feelings is used as way of caring for his mother, by protecting her from his feelings about the way in which her night working pattern affects how they might interact otherwise.

Perhaps this negative sentiment is heightened by this occurring at weekends and during school holidays, and therefore children are acutely aware that they are having a treat or doing something exciting such as going shopping or having a picnic, which is a family activity, and yet their mother cannot be there because she has to sleep. Therefore, although they may enjoy in some respects spending time with their father, they know their mother is absent from a family activity, and they probably also miss her, the familiarity of her parenting style and her emotional support.

5.2.9 Conclusions - Direct influences of nurses' night work

This section of the chapter has considered what children regard as the influences of their mother's night work, and the ways in which these may affect children's and other family members' lives. Children talked about several areas in which night work affects them. Perhaps the most important influence is their mother's absence, and their father usually being responsible for them instead. Children offer considerable insights into gendered differences in parenting styles, with fathers often being more relaxed and occasionally more strict than their mother. This appears to result in simpler, less healthy meals and going to bed slightly later during their mother's night work. Additionally, children show awareness of the influence of night work on their mothers' sleep, resultant tiredness and associated influences on the general mood and activities of the whole family. Children also demonstrate their involvement in strategies to help their mother by protecting her sleep and minimising their need for her assistance.

5.3 CHILDREN'S PERCEPTIONS OF THEIR MOTHERS' NIGHTWORK

In discussing direct influences of mothers' night work from children's perspectives, allusions have already been made to children's insights into their mothers' night work more generally, including its wider and indirect effects, and also providing opportunities for children to identify gendered differences in parenting styles. This section discusses these perceptions and insights in further detail, as well as the conclusions which children draw about their mothers' night work and its consequences in the context of their lives.

This section opens with discussion of children's preferences about their mother's shift patterns for their mother, leading on to consideration of children's perceptions of the consequences of their mother being present or absent at home at particular times. Children's overall opinions on night work and its consequences are then discussed, including their perceptions of night work and its consequences as "boring", "normal" or making no difference to them.

5.3.1 Preferences about mothers' shift patterns

Although a small number of children indicate that they prefer their mother's night working pattern, almost all the interviewed children express a preference for a regular daytime weekday working pattern. Therefore, this suggests that most children would prefer their mothers not to work night shifts. No particular patterns in preferences by age or gender of the children were identified.

When discussing existing shift patterns, most children say they prefer their mother to work an early shift (approximately 7am-3pm) rather than a late shift (approximately 1pm-9pm) and that they value her presence in the evening more than in the morning. Reasons given include the evening being children's *"busy time"* (Teenage daughter, Davis family) and that *"It's longer so you see more of them"* (Teenage son, Evans family). When working at night, mothers are usually not at home in the early morning and while they may be available for the early part of the evening, this is unlikely to be a long period of time, and as discussed in the first section of this chapter, they may be busy preparing a meal, getting ready for and leaving for work.

Additional reasons for wishing their mother could work just in the daytime and during the week include the regularity of the working pattern, and her availability at weekends. This would enable children to know in advance whether it is possible to plan certain activities in their own free time without complex considerations about expectations of other family members in their mother's absence:

> *"I barely know, she tells me before she leaves and I go "Oh". It would be nice if she did regular shifts 'cos then I'd know when she'd be home, then I'd have to have like a diary and write it all down, I'm not organised enough to know when*

she's here...if I could make up shifts it would be 9 to 5 and weekends off so I'd know when she'd be here and...it would be nice if she had a weekend off, 'cos that's when I get off... like we had the first Saturday together in a long time the Saturday just gone that was nice... it's just nice to spend the day with your Mum - we went to a ballet and you know it was really nice seeing her"

(Teenage daughter, Williams family, Individual interview)

The importance of having mutual free time so that she can regularly spend leisure time with her mother without making complex arrangements is clear for this teenage daughter, and is a disadvantage of her mother's current rotating shift pattern. This reflects research by Volger and colleagues (1988) which analysed common free time between shift working fathers and their children. This paper indicates that shift working fathers have less common free time with their children than day workers, but also notes that this explains only a small proportion of variance in relationships with their children.

Given gendered expectations about relative roles of mothers and fathers and usual gendered patterns of childcare, it is likely that different dynamics will apply to common free time with mothers than with fathers. For example, time with fathers may be focused around "fun" and leisure activities, while time with mothers may be focused around more mundane everyday activities and the needs of other family members (see Bateman 2006; Burghes, et al. 1997:55; see Oakley 1974b:179-80; Yeung, et al. 2001). Additionally, there is not necessarily a direct relationship between the amount of time spent together and children's perceptions of a mother-child relationship, especially where the mother is working a rotating shift pattern. For example, Galinsky (2000:89ff) argues that "focused" time together is important and more of a priority for children than increasing the amount of time spent together overall.

5.3.2 Mothers "being there" or not "being there"

Almost all the children interviewed talk about how things are different when their mother is away from home when she is working. Few are able to specify exactly what is different when their mother is absent, but most feel that it is important for her to be there. They appear to feel this most keenly in relation to evenings and weekends. These sentiments

appear to be shared by boys and girls, and across all age groups. For example, these are the comments of an older teenage boy:

S *She's ere I dunno*
I *yeah yeah, so is that partly about her being around to cook or?*
S *yeah but*
I *but more that she's around?*
S *yeah*
I *So what difference does it make to you if she's around or not?*
S *I dunno 'cos even when I'm upstairs dunno it's just that she's ere*

(Teenage son, Robinson family, Individual interview)

Despite being in full time employment with a busy social life and preparing to leave home, it is important to him that his mother is present when he is at home. It is interesting to note that although he appreciates her cooked meals when they are both at home at the same time, her being there is more important than her fulfilment of any specific tasks.

Similarly, a teenage girl in another family describes how when her mother is there she will be given a lift in the car rather than having to walk to the station, but again it appears that the "interaction" and her mother's presence are more important than not having to walk:

"Umm I'm still usually busy but if she's not here then I might not be as busy because I talk to her, and then if I'm going out I might ask her for a lift, or she'll sort of give me.. or I'll ask for a lift to the station rather than walk there, but it doesn't really change that much, it's obviously better if she is here... just for interaction [laughing], it sounds a bit contrived"

(Teenage daughter, Davis family, Individual interview)

Younger children also appear to value their mothers' presence highly. However, it seems that they may be more aware of her absence at night:

S Well umm well I feel quite left alone when only [younger sister] and Dad are there 'cos I get quite scared in the house at night when there's only Dad, [younger sister], and me but when Mum's at home I don't feel that scared

I Do you have any idea what the difference is?

S Well because my Mum... at night I usually tend to wake up and every time I wake up, 'cos when I'm upstairs reading I usually hear sounds like footsteps and stuff and I sometimes call Mum or Dad and they just say "[my name], there is nothing upstairs"

(Pre-teenage son, Lowe family, Individual interview)

Again, although this boy mentions a specific activity (here, having fears of the dark allayed), as he mentions that his father may similarly reassure him, it is clear that he misses the reassurance of his mother's presence specifically. In this case, it seems that even in uttering the same words, the child has greater confidence in his mother and is more reassured than when his father says the same words. This suggests a gendered orientation to their mother as providing greater stability, comfort and reassurance. This focus on the importance of mothers being present, even if asleep, stands in stark contrast to the accounts of male shift workers in Hertz and Charlton's (1989) study which indicate that their children regard their descent of the stairs after day time sleep following night shifts as equivalent to their return from work: "I've been there but I haven't been there" (p.495).

These children emphasise the value to them of their mother being present in the home to fulfil certain tasks, but more importantly to "be there". While some children, especially pre-teenage children, mention that night work enables their mother to be there for them after school and sometimes just before school and for the school run, the majority of children in this study feel that their mother is there less during periods of night work. Factors mentioned include daytime sleep which may extend into the after school period, leaving for work in the middle of the evening, and not being there during most of the early morning period. This is in contrast with Garey's (1995; 1999) work in the US which indicates that nurses' decisions to work at night are strongly influenced by narratives of "being there" during the day as crucial to a "good mom" identity. According to this narrative, night working nurses are available to their children during the day in a similar manner to "stay-at-home-moms", because even though they may be asleep, they are present and available in the family home. For example, if their child becomes ill at school, the school can contact the mother,

who is able to collect and care for her child at home. Seen from children's perspectives, being there for children as company, reassurance and to complete specific tasks and deal with problems during evenings and weekends appears important. However, it seems that when children are at school or college their attention is focused away from home, and the need for their mother to be available should a problem arise may not be seen as important. However, the emphasis given to their mother being there by children of different ages, both genders and different family circumstances, suggests that children do contribute to and take up the gendered narrative on the importance of their mother "being there" for them.

While most of the children in this study regard their mother "being there" for them as important, and they sense that things are different in her absence, children do not necessarily feel that time at home without their mother is negative. As discussed in the previous section about direct influences of night work, most children appear to enjoy spending time with their father in a more relaxed environment where they may be able to go to sleep a little later. Many children appear to value this freedom with its opportunity to do what they choose a little more, and also recognise the value of this for their father:

> *"I think it's good for Dad because he gets like time to himself and stuff, to do, like watch TV, like what he likes and stuff, and I think it's kind of good that everyone like kind of gets a break from each other, 'cos like living together all the time and things like that really [laughing]"*
>
> (Younger teenage daughter, Smith family, Individual interview)

This account indicates night work as a break for fathers and children from the usual demands of time spent together.

Their mother's absence also appears to enable children to identify differences in personality and parenting styles between their parents. Most children conclude that their mother is more consistent and also appreciative of their individual needs and may stand up for them in discussion. Most children indicate that their father may be less consistent than their mother, varying between being very kind and suddenly very strict. While most children appear to feel these changes during their mother's absence, it seems that younger children and older children with younger siblings are more likely to say that this makes any difference to them. This may be because teenage children are more likely to have, plan or create their own

routines, whereas younger children may rely on their parents (and especially their mother) to create and maintain their usual routine. An older teenage daughter very cogently summarises here the difference for her in the structure and feel of her evenings when her mother is absent from home on night shifts and her father has responsibility for herself and her siblings:

> *"Dad's just sort of like a bit more like laid back, I dunno the evenings don't seem as sort of like structured when Mum's not here. Dad's like just seems to he's sort of like relaxed 'cos he doesn't have to worry about being like told to do stuff by Mum and stuff like that and [younger teenage sister] and [younger pre-teenage brother] pretty much have a free run 'cos they know Dad's a bit easier than Mum [laughing]... It's not like major like military like structure kind of thing but it's just like the little like that it's just enough to like when it's not there you just sort of notice it and [younger pre-teenage brother]'s just like wandering around and stuff... it's just the fact she's around and stuff and we can like talk to her if she's there and things like that, so it just feels a bit like a bit cut off, the days when she is doing nights... you like never get to see her for like four days..."*
>
> (Older teenage daughter, Smith family, Individual interview)

Thus, for this daughter, her mother's absence and the more relaxed and less structured evening in her father's care enables her to identify the techniques and approach usually employed by her mother to provide structure to the family's evening. The same daughter also talks about how her pre-teenage brother being downstairs at 10pm in her mother's absence left her feeling partly guilty about this deviance from the usual routine, and so she felt she needed to encourage her brother to go to bed. While none of the children referred to differences between their mother's and father's parenting style in terms of women and men or gender, this remark suggests a loyalty to her mother, and a gendered sense of responsibility as the oldest daughter present to undertake emotional work and to encourage her brother to meet the usual bedtime expectations. While this may reflect gendered differences between male and female children of night working women, there was no further evidence of such patterns of expectation within this sample.

5.3.3 Night work as "boring"

As we have seen, children talk about some aspects of their mothers' night work as positive for them, some aspects as negative, and some as not affecting them very much. In considering children's overall opinions concerning night work, we now consider understandings of night work as "boring", before moving on to consider how much night work and the changes which it brings about actually affect children.

Some of the interviewed children display a certain accepting weariness about their mothers' night work, with the word "boring" appearing quite often in relation to themselves and their mother. This appears to express a sense of familiar inevitability about their mother being away, the need to keep quiet while she is asleep and restrictions on some activities. For example:

I *Ok and how about if she's working nights at the weekend – how does that tend to be?*

D *It's boring*

I *Boring for you – or boring for her?*

D *Boring for her - and for me*

(Pre-teenage daughter, Lowe family, Individual interview)

Two factors appear to relieve children's feelings about night work being boring. Firstly, because their mothers are working rotating shifts they are not working at night all the time, and usually not every week:

"It's good for a change, but if she kept on working nights it would get boring"

(Pre-teenage son, Smith family, Individual interview)

As discussed in relation to food, children comment similarly that while they enjoy eating simpler and less healthy foods such as chips while their mother works nights, this would get boring if it occurred more regularly.

Secondly, several children demonstrate an awareness of the need for their mother to work to contribute to the family's finances:

> *"It's all right, she's just working like to get the money, so we've all just got to deal with it"*
>
> (Teenage daughter, Moore family, Individual interview)

> *"Mmm when she does, she gets lots more money for the family. I remember one day she had £3 in her bank.... more nights is more money"*
>
> (Pre-teenage daughter, Field family, Individual interview)

Some children also mention that working nights specifically helps to increase income because of the higher rates paid for night work. This direct contribution to family finances from night work appears to help justify to children the "abnormality" of going against norms in their mothers working at night, and also helps alleviate consequences of any negative influences of night work. It is possible that this pecuniary advantage of night work also encourages children to be supportive of their mother's night work and minimises any negative feelings.

5.3.4 Night work does not affect me, makes no difference to me and is normal

Interestingly, the majority of children when asked to conclude how they felt overall about night work gave a neutral statement such as "*don't know... I don't really have an opinion really on it, umm, no [laughing]* (Older teenage daughter, Smith family)", "*I don't really mind if she's on a night [shift] or not...it doesn't really affect me*" (Pre-teenage daughter, Brown family) or describe night work as "*normal*" (Teenage son, Wilson family). This is especially interesting as these statements are made by children who in the same interview describe apparently quite major changes to their routines and activities during periods of night work. Many of these children also express both positive and negative sentiments about night work and its influences. In these cases it is unclear how children's accounts of night work as neutral are developed from and co-exist with experiences which are described as quite clearly positive or negative.

Additionally, only one child makes direct reference to his mother's night work on the audio sleep diary. This is curious given children's awareness of the study's aims focused on night work and the opportunity afforded by audio sleep diaries to rapidly record thoughts as they arose. The audio sleep diary entry regarding night work was to say it makes not much difference:

> *"Day 6 quarter past seven. Mum's on a night so her first night [intake of breath] urr she left at like half seven last night or whatever, umm but it didn't really make much difference, 'cos I was playing with my rats and I went and saw [stepfather] and [stepfather's brother] downstairs and the x box, and then went to bed for a bit and then I'm up in the morning and she'll be back in three quarters of an hour bright and breezy 'cos she's been up or whatever, and I'm really looking like, mm so that'll be a bit strange, but I'm used to it really."*
>
> (Teenage son, Taylor family – Audio Sleep Diary Day 6)

This audio sleep diary entry suggests that the son was aware his mother was working at night, the reference to this in the audio sleep diary was made more because he sensed the researcher is interested in the influences of night work for nurses' families, rather than because he regards night work as having any important influence on him. While he acknowledges that his life during night work is slightly different, he is familiar with it and so does not regard it as a large or negative influence. A pre-teenage daughter makes similar comments about going to sleep while her mother is on a night shift:

> *"mmm sort of a bit weird 'cos sometimes I forget and I call her name and she doesn't come, I forget sometimes, it feels all right"*
>
> (Pre-teenage daughter, Field family, Individual interview)

While it is "a bit weird" when her mother is not there to respond when she calls, the daughter is used to her being absent at night and she is aware that her brothers and father are in the house, so "it feels all right."

Other children, especially teenage children, indicate that night work does not affect them because of their independence from their parents and their ability to plan and carry out their own activities without much assistance.

S *It doesn't really affect me much any more but I think it used to*
I *So does it affect you at all now, would you say or?*
S *No when it's bed time, it's bed time, I get into bed and sleep and then when it's time to wake up, I get up and go out*

(Younger teenage son, Baker family, Individual interview)

It seems that children's sense of independence, their familiarity with their mother working at night and their appreciation of the importance of night work to family finances all contribute to their acceptance of night work and conclusions by the vast majority of children that while there may be some aspects of night work and its influences which may have positive or negative consequences for them, overall night work has limited or no effect on them.

Additionally, few children can identify when their mother started working at night (even if this was fairly recently). This suggests that night work and its influences, while not necessarily desirable all the time and not what happens the majority of the time within the household, become normal because they happen fairly frequently and children become accustomed to and adapt to this working pattern. While night work may have a number of influences upon family life, in the context of busy lives and time together when mothers are not working at night, children appear to feel that night work makes limited difference overall to them. However, it is also important to consider how and why children's accounts presented here are constructed.

Näsman (2003), analysing accounts of children about their parents' employment or non-employment, suggests that it is common to accept current circumstances. In this study, two factors may have contributed to children hesitating to go beyond neutral acceptance or "boring" in describing their perspectives about their mothers' night work. Firstly, children in this study demonstrated strong understanding of the reasons for night work (practical, financial, mother's career) and the lack of opportunity for changing this working pattern. Therefore, for the sake of themselves and for their parents, they may have embraced acceptance to avoid considering changes which could not be fulfilled. Secondly, in speaking

to a researcher who was a temporary "outsider" within their family, children may have wished to avoid presenting any criticism of their situation (either consciously or subconsciously), and of their mother's working pattern in particular. If this apparent acceptance involved not expressing negative opinions for the sake of their mothers, this again demonstrates children doing emotion work to reduce potential burdens on their mother and family more widely as a result of night work.

5.4 CONCLUSIONS - PERSPECTIVES ON NIGHT WORK FROM NURSES' CHILDREN

This chapter indicates that children's interview accounts suggest they are aware of a variety of direct influences which their mother's night work may have upon them, but that their overall perceptions of night work and the conclusions which they draw about it may not be clearly linked to influences which they experience, due to a variety of contextual factors.

Which adult is present and responsible for them in the home appears to be important to children, especially as this may involve varying expectations of them and may influence patterns of food preparation and consumption, and patterns of sleep and other activities. The accounts of older children talking about their younger siblings and their experiences when they were younger suggest that direct influences of night work may be greater for younger children, although the accounts of younger children do not seem to reflect this.

It appears that their mother's night work provides children with an opportunity to reflect on the expectations and parenting style of their mother, who is usually responsible for them, and that of their father. Many children conclude that they feel their mother is consistent about certain expectations and rules, and that their father shows inconsistency in expectations: enjoying spending time with them and being more relaxed in their mother's absence and possibly allowing certain activities, bedtimes, foods and behaviour which their mother might not permit, but on occasions he might also be much more strict than their mother.

Children's independence, their awareness of the financial benefits of their mother working at night, and their familiarity with her working at night and on early and late or long day shifts all appear to reduce the direct influences of night work in children's opinions. Children's

accounts also imply that they may do emotion work on themselves to minimise any negative feelings about night work's consequences and this reduces potential additional burdens of night work on their mothers. While they identify some positive and negative consequences of direct influences of night work, the majority of children participating in this study provide a neutral overall opinion of night work, indicating that they regard it as normal or not particularly affecting them. This may reflect the relative insignificance of night work in these children's lives and normative assumptions about acceptance to minimise conflict or appropriate presentations of self and family to an "outsider" researcher.

The perspectives on night work of children participating in this study appear to be in stark contrast to the very negative consequences of mothers' or fathers' night work for children which have been expressed in previous studies (2006; Barton, et al. 1998; Strazdins, et al. 2004). It is important to remain aware that the children participating in this study are part of families who had chosen to participate in the research and where fathers are supportive and play a greater role in parenting than may occur in other families. Therefore it is likely that any families experiencing very negative consequences of night work would be reluctant to invite a researcher into their home to discuss their experiences of night work. A further point is that the mothers of these children are not working at night all the time, but that they also work other shifts. While most children appeared to regard night work as having a greater influence than other shifts, several children comment that mothers' absence for the whole of the afternoon and evening during late shifts may be more negative for them than her departure for night work half way through the evening. However, several children also comment that comparisons with late shifts are complicated because while their mother is present in the afternoon and early evening before night shifts, her impending departure for work and her likely sleepiness and associated mood changes may not be experienced as positive.

This chapter demonstrates the depth of insights which children can contribute to qualitative interviews about their lives and their interaction with other family members. This reflects Presser's suggestion that night work has complex implications for the lives of families. While children experience some negative direct influences of their mothers' night work, other changes are regarded as positive or are reported not to affect them; some feelings appear to be minimised through children's own emotion work; and additionally, that the majority of children express neutral acceptance as their overall opinion about their mothers' night work.

Chapter 6 - Perspectives on night work from nurses' husbands

6.1 INTRODUCTION

This chapter discusses husbands' perspectives on their wives' nursing work at night by drawing on audio sleep diaries and data from both individual qualitative interviews with 20 nurses' husbands and joint qualitative interviews with both the nurse and her husband. Further details about husbands' age, occupation, working patterns, and their wives' nursing patterns can be found in Appendix 11.

As discussed in previous chapters, the literature on shift work is predominantly negative. However, there has been little analysis of the consequences of women's night work on husbands and even less involving interviews with night workers' husbands. The data presented here are of importance because it is rare to consult husbands concerning influences of their wives' working patterns for themselves and for their children.

This chapter focuses on husbands' accounts concerning their wives' night work. This includes husbands' experiences, perspectives, and opinions on the ways their wives' working patterns intersect with their lives and family life more generally. The chapter falls into three main sections. The chapter opens with consideration of the contexts of night work for husbands, including their own employment patterns and experiences of shift work and night work, and the ways these intersect with their wives' night work. Secondly, influences of night work from husbands' perspectives are considered: this includes the responsibilities and freedoms which night work brings about for husbands, as well as their reflections on night work's influences for their children and for their wives. The third section of this chapter covers husbands' overall perceptions of night work and their balance of opinions about its place and influence within their family.

6.2 COUPLES SHARING PARENTHOOD IN THE CONTEXT OF NIGHT SHIFTS

The husbands participating in this study all live with their wife and their children and/or step children. While the focus of this study is on nurses' night work and the ways in which these are experienced and have influences for all family members, it is important to consider husbands' working patterns and how this may affect husbands' roles within families and their experiences of wives' night work.

6.2.1 Husbands' working patterns

Participating husbands are aged between 31 and 57 years and work in a range of occupations and according to a variety of working patterns (details can be found in Appendix 11). It is important to note here that fewer than half of the husbands work only daytime hours (09:00-18:00). Half of the nurses' husbands work early mornings, evenings, weekends on a regular basis, and four husbands currently work night shifts also. In addition, a further four husbands have previous experience of night work.

These working patterns mean that many husbands are absent from home while working outside normal daytime hours, but at other times they have responsibility for the children while their wife works. Additionally, these working patterns provide many husbands with personal experience of shift work and night work specifically.

6.2.2 Co-ordinating childcare with wives

Qualitative data from nurses' husbands suggest that the planning of work patterns and childcare is complex. In addition to their night shifts, all the nurses in this study are working either long day shifts (c08:00-20:00) or early (c07:00-15:00) and late shifts (c13:00-21:00), all of which involve periods when children are likely to be at home. It appears that ensuring at least one parent is available at all times when children are not occupied with other activities requires considerable planning, with much depending on the flexibility offered by employers. Although the need for availability of at least one parent is considered less pressing where there are only teenage children, where possible parents make arrangements

to facilitate parental transport of children to school, college and other activities. While husbands emphasise their efforts to be available for their children as necessary, it is clear that nurses take primary responsibility for children and most husbands usually only perform tasks such as taking children to school when the nurse is actually at work at that time:

I Ok, so some of the time they wake you up and then go off to school – are there times when you're taking them to school?

P Yes

I When would that be – is there a pattern to that?

P There's a pattern only in that it's dependent on [wife]'s shifts

I So if she's at work you'll take them?

P Yes

I So if she's on an early?

P If she's on an early obviously I need to take them, umm and vice versa if I'm on an early – sometimes if we're both at home in the morning I'll go with them anyway to the school, depending on whether I'm allowed to lie in or whether I have to get up.

(Husband, 40s, Brown family, Individual interview)

Thus, as with several families, this father regularly looks after the children in the morning and takes them to school, and although he "sometimes" takes them to school when his wife is at home, he emphasises that this is mainly dictated by his wife's shift pattern and her associated availability. His reference to lying in when he is "allowed to" appears to refer principally to whether his daughters wake him. Similarly, husbands report collecting children from school or childcare providers (friends, family or child minders) and supervising them during the late afternoon and evening while their wives work long day and late shifts. However, while their wives may be present in the early evening before working night shifts, it seems night work may have a greater influence because husbands have responsibility for children both in the later evening and early morning.

Husbands' accounts suggest that in most cases, there is greater flexibility in one parent's working pattern, and that this enables one parent to be available as necessary. This flexibility usually involves being able to request certain shifts or to use flexitime to fit in with their partner's more rigid working pattern.

There appears to be considerable variability in the extent to which nurses are able to request to work or not to work certain shifts and to swap shifts, and in the amount of notice given of forthcoming shift patterns. Additionally, differences between husbands in the timing and length of shift rotas and their issuing may facilitate or hinder planning between them, as there may be greater flexibility where work patterns are planned in advance. Husbands mention that planning of work patterns and childcare during school holidays and also the planning of overtime often presents particular logistical challenges.

Several husbands describe the flexibility of timing in their jobs, which enables them to work more when their wife is not at work, and to be available for their children when she is working. While this may involve considerable planning, it can allow husbands to "*fit around [wife]'s work patterns, in a way for the kids...*" (Husband, 50s, Harris family, Joint interview) and indeed some husbands state that they work these patterns for their children's sake.

Conversely, some husbands describe the need for their wife to request and swap shifts to accommodate their own working patterns so that one parent is always available at home:

> "*I think [wife] just looks and does the opposite, umm not because she doesn't want to see me, I dunno, it's just to accommodate the children really and to accommodate when I'm off. We'll generally have the same days off, and when we're working it'll be opposite*"
>
> (Husband, 30s, Jones family, Individual interview)

Thus, husbands draw attention to the meticulous planning often required to ensure that one parent is available for the children. While this reduces childcare costs and enables both parents to spend time with children at home, this may have consequences for the amount of time which the family can spend altogether, and particularly the amount of time both partners may have as a couple. This may affect communication and sharing responsibility for managing the household and family and planning activities:

"Probably just time to make decisions between the two of us, we're like passing ships at times, I'll remember something when she's at work and she'll remember something when I'm at work, and when we get together we'll have forgotten it."

(Husband, 50s, Patterson family, Joint interview)

Working such different patterns which include nights, evenings and weekends also has effects on couples' ability to socialise:

"Yeah I mean social occasions always has to be dependent on what [wife]'s shifts are, you know like so we'll get, I dunno an invitation or something or just meeting a group of friends, and you know it's always then looking at the calendar to see what shifts she's on, to whether we can you know, whether we go as a couple, or whether one of us will go or neither of us will go."

(Husband, 40s, Wilson family, Joint interview)

While husbands' accounts suggest that both parents make efforts to ensure they are available for their children and for each other, and several husbands describe how they work flexibly to accommodate their children's needs, these accounts, in line with a considerable body of literature (see Cunningham-Burley, et al. 2005; see Dex 2003; Hochschild and Machung 2003), suggest that there remains a gendered expectation that mothers will care for children unless they are actually working at that time. Two fathers describe doing shift work for the sake of their children and taking primary responsibility for delivering and collecting their young children from school. However, a large number of participating fathers who describe how their wife worked only night shifts when their children were younger further evidences the gendered bias in the division of household labour. Even in the two families where fathers were doing shift work (one was doing so for paid employment alongside a day time college course), it was clear from accounts in joint interviews and from their wives' and children's accounts that this was as a supplement to mothers' primary responsibility for the care and wellbeing of children.

Almost half of the husbands in this study have current or previous experience of working night shifts, and several draw comparisons between this and their wives' work patterns. Almost all of the husbands with experience of night shifts conclude that their own night shifts

are less arduous than those worked by their wives. Husbands give a variety of reasons for their wives' shifts being more difficult, including longer shift length, fewer night shifts worked together and greater and more rapid variation between shifts, more responsibility at work and more tasks to be completed at a greater pace. Curiously, none of the husbands makes any reference to the possibility that greater and gendered responsibilities for housework and childcare at home may increase negative influences of night work for nurses. This comment in a joint interview from a husband working a rotating shift pattern is the furthest any of the husbands ventures in considering gendered differences in experiences of night work:

> *You [wife] are quite driven – that's a compliment by the way – you are quite, still probably work all the way through, your mind will keep you concentrated. So I think, you know, it might be just a male-female thing then, umm, 'cos the lads if they haven't had a good kip during the day they can come in and go "Oh I'm not gonna last tonight."*
>
> (Husband, 30s, Jones family, Joint interview)

This husband's own experience of night work with male colleagues allows him to reflect on differences between men and women's engagement with and attitude towards night work and sleep. However, it is interesting that this husband depersonalises his reflection by drawing on his male colleagues' behaviour to discuss this gendered difference, rather than making direct comparisons between himself and his wife and their responsibilities within the home.

Accounts of husbands in this study indicate that they are involved in planning work schedules with their wives to maximise parental availability for their children. However, it is clear that although husbands may arrange their work schedules to accommodate their wives' less flexible shift patterns, their wives' primary responsibility for childcare remains. A significant minority of these husbands has personal experience of night work and most indicate that they feel their wives' night shifts are more challenging than their own due to the nature of nursing. Curiously, no husbands refer directly to influences of gendered expectations about responsibility for childcare and household tasks on experiences of night work for their wives.

6.3 INFLUENCES OF NURSES' NIGHT SHIFTS FOR HUSBANDS: RESPONSIBILITIES AND FREEDOM

This section of the chapter considers husbands' perspectives on the influences which their wives' night shifts have for them. In contrast with nurses' children, husbands appear more aware of the influences of night work for themselves, and these influences appear to be greater. For example, while only one child mentions their mother's night work in an audio sleep diary and only on one occasion, over half of the husbands mention night work in their audio sleep diary, and many of these entries mention direct influences of their wife's night work. For husbands, these influences are grouped in two main themes: additional responsibilities arising from their wife being at work overnight and sleeping the following day; and freedom arising from her absence.

Husbands report two groups of additional responsibilities during their wives' night work: responsibility for children and the performance of certain time-sensitive household tasks in nurses' absence; and caring for nurses themselves.

6.3.1 Taking responsibility for children and increased housework

Perhaps the most obvious influence of nurses' night work is their absence from home during the evening, night and early morning, and while sleeping the following day. For their husbands, this means responsibility for children, collection from school, evening activities, meals, bedtime, overnight, waking up, preparation for and sometimes delivery to school.

While the nature of the tasks may vary considerably depending on children's ages, activities and level of independence, all husbands mention increased responsibilities in their wife's absence during night shifts. The amount and nature of other housework completed by husbands may also vary depending on their skills, the tasks which they usually complete (for example, some husbands may regularly prepare meals even when their wife is not at work) and requests from their wives about the completion of specific tasks.

In families with older children, husbands draw attention to the lesser influences of night shifts for all family members, now that children are less dependent on their parents and are able to

perform many more tasks for themselves and may be able to spend short periods at home with neither parent present. However, husbands clearly state that even when children are over the age of 16, there are still considerable responsibilities of co-residence:

> "... *'cos the age they are now, they're grown up, it's not really an issue for them, they don't really notice most of the time if we're here or not, the only time they might notice is if the washing's not done or their dinner isn't there so "Uhh Dad we've run out of towels. Where's me work shirt? Why haven't I got any socks?" So that's the sort of issue, they've got their own big social circle of friends. I think I'd be quite worried if at 17 to 23 they were still depending on Mum and Dad to be there all the time*"
>
> (Husband, 50s, Williams family, individual interview)

Indeed, when children become more independent, this may reduce their knowledge of their mother's shift pattern, thus increasing their father's responsibilities:

> '[*younger son] is quite aware that she's in bed and [middle son] if he's here will carry on as normal and I think [older son]'s probably reasonably aware although having said that they don't monitor her shifts, so if they do make noise it would be up to me to go 'Keep it quiet 'cos Mum's in bed*"
>
> (Husband, 50s, Baker family, individual interview)

Additionally, several husbands' accounts mention children's independence and indicate that when one or both parents are present, responsibilities which would otherwise remain their own (e.g. waking up and leaving for school on time) are abdicated by children to parents. This seems to be similar to levels of responsibility between the nurse and her husband: when she is absent at work, and especially during night shifts, her husband assumes responsibilities which would otherwise remain hers.

In families with younger children, parents' levels of responsibility are higher and husbands talk about taking on tasks which would otherwise be completed by their wife. In addition to being active in completing or assisting children in completing these specific tasks, many

husbands mention a general heightened awareness of responsibility and potential need for reactivity, as exemplified by this father of two primary school-aged children:

> "*...I usually go to bed about the same time we would go to bed, probably about half 11, something like that, umm I find that when I'm on my own one of the big problems is that I'm listening out for the children a lot more for some reason, so I'm really listening out for them, so like the slightest movement, so when [pre-teenage son] moves you know, when he's asleep you'll hear the bed knock slightly against the furniture and just that slight noise will wake me up whereas when [wife]'s here they don't, I suppose when I'm on my own I feel more responsible*"
>
> (Husband, 30s, Lowe family, Joint interview)

The emotional labour of being "on call" and available for the children is described by this husband as quite tiring, affecting his sleep and his likelihood of waking during the night. This father's unfamiliarity and unease about being solely responsible for and available to his children while he sleeps further emphasises the gendered nature of childcare responsibilities. This may be heightened by gendered expectations that mothers usually take on this "fourth shift" of emotional labour during the night time period, without any negotiation about this responsibility (see Venn, et al. 2008).

At weekends, husbands' sense of responsibility extends beyond the actual period of night work to cover the following day, when they are usually not at work, children are not at school or work or undertaking paid employment and they are usually at home and their wife is trying to sleep. While no husbands gave any indication of unfairness in the balance of their responsibilities and leisure time and their wife's need for sleep during the day, night shifts at the weekend appear to be a source of negative feeling for several husbands, as they cannot engage in certain leisure activities which involve making noise (for example, DIY) and they must ensure the house is kept quiet. In many families, this involves the father taking the children out of the house for several hours to enable his wife to sleep:

> "*When the kids were younger we got into a routine which almost excluded [wife] because she was working permanent nights. Weekends [wife] wouldn't come into the equation, or not intentionally but [wife]'ll be in bed and 'Come on kids, we'll have a*

picnic down the beach' and you get into a bit of a routine doing that, so you can imagine that could be quite disruptive"

(Husband, 50s, Williams family, Individual interview)

While many husbands indicate that going out is the easiest and most successful method of honouring their responsibilities to keep the house quiet, misgivings are also expressed about their wives being excluded from this family activity, and the influences this may have for family relationships.

This increased responsibility of husbands, and especially responsibilities for children and household tasks which are usually held by their wives as mothers, provides insights into these often gendered expectations, responsibilities and experiences.

Firstly, this responsibility for their children, particularly overnight, can give husbands a sense of greater confidence and closeness with their children:

"*I think what's quite interesting as a husband with children is that it's made me quite confident, from when my children were small, I am here at night with them, and I'll tell you one story that will make you laugh, as a woman! The first night [wife] went off and left me with [older son] as a baby I was absolutely terrified about this thing, about was he breathing in his cot, so I get down on my hands and knees and stick my ear next to him to make sure he was breathing and I hardly slept a wink that night 'cos I was terrified that he was on the wrong side, but he was a dream baby, really really easy going and never a problem. [Younger son] was a different story 'cos he's got Aspergers, but when he came along I felt much more confident about dealing with these situations and we had a crisis in the night when he was admitted to the hospital with an asthma attack and I had to deal with that until [wife] appeared, and the doctor came round and that was horrendous, but I could I dealt with it*"

(Husband, 50s, Harris family, Joint interview)

Duindam (1999), in studying fathers in the Netherlands taking caring responsibility for their children, similarly found increased confidence among fathers, as well as a "deeper and more direct relationship" between fathers and their children. Additionally, having this responsibility

gives husbands insights into the pressures and extent of responsibility normally held by their wife:

> *This is seven o'clock on day 5 am – last night was probably my poorest night's sleep so far. I mentioned last night when I went to bed how tired I was – I guess when I think back – yesterday after work I'd gone straight to collect my daughter from the stables, umm popped into [supermarket] to get something for tea on the way home, come in and then made tea, really without sort of stopping, then washed up afterwards and then had to pop to the shop to get something else we'd run out of, and visit my mother-in-law with something, and so with all that probably I didn't get home until about half past nine, so it's not surprising I was rather tired last evening, and I guess that's what [wife] has to put up with many days, so I'm seeing the other side of the coin. I found it difficult to settle last night when I went to bed – I seemed to have a few things on my mind – not worrying me, but just things I needed to do or sort out, both at home and at work so it took me longer than normal to settle down and umm resultingly I had a longer than normal snooze this morning when I sort of woke up. I do feel a bit sleepy still now, but no problem keeping awake so.*
>
> (Husband, 40s, Smith family, Audio Sleep Diary)

Rather than most of their time being for leisure when not at work, during night shifts a new period of responsibility exists without their wife. Thus, husbands are experiencing something of the "second shift" of responsibilities for children and household tasks which are held by women in most families (Hochschild and Machung 2003). Additionally, the accumulation of these pressures and the absence of his wife to whom he could otherwise offload these feelings, this husband appears to be gaining insights into both the 'third shift' of emotional labour (see Hochschild 2000; see Kremen Bolton 2000).

This level of responsibility in the household appears to give some men a desire to prove their ability to undertake household tasks and to care for their children and their wives:

> *"I'm more motivated to make sure [children are up and necessary tasks completed] and I don't want her walking in the door and me not being underway with things...and I like to make sure, I think she's going to come home about 8 o'clock*

and even I'll have the kettle on and try and time a cup of tea for her 'cos obviously she's had no sleep, she's desperate for a cup of tea when she walks in"

(Husband, 40s, Wilson family, Individual interview)

Husbands' desire to prove their worth in household responsibilities and their ability to care for and encourage their children and their wife may be heightened by the interviewing process, especially with a female interviewer. However, it seems that husbands are very aware of the pressures of night work for their wives and therefore wish to alleviate any additional pressure related to the family and household by assuming additional responsibility and by caring for their children and supporting their wives.

6.3.2 Caring for wives

Husbands in this study display appreciation of the considerable pressures faced by their wives working at night as nurses, due both to the long hours of work and because they are working during the night. Husbands in this study readily extend care to their wives, out of concern and to minimise these pressures. In assuming responsibility for children and undertaking household tasks, these husbands are indirectly caring for nurses by reducing expectations of them.

However, almost all husbands also mention their desire to protect their wife's minimal sleep opportunities, and to alleviate potential difficulties due to tiredness and negative moods after night duties.

Lack of sleep is an area of considerable concern for husbands, both in terms of their wife's wellbeing and the risk of accidents:

"Well I hate [wife] doing nights, partly for, you know, I just worry a little bit about her doing nights, things like her coming home after she's not slept for such a huge amount of time, the recovery time, it does affect the family and I think it can be just quite unpleasant, particularly the first night, you do a night, all those hours, which clearly isn't the way we're designed to work, so I worry about the risk of her having an accident"

(Husband, 40s, Wilson family, Joint interview)

Many husbands have a sense of the immense influence of this lack of sleep for their wife and for all family members, and thus attempt to protect her sleep in several ways.

Firstly, some husbands mention the need to ensure their wife has good sleep before night shifts begin, and they may sacrifice their own sleep needs for this:

"Urr day 4 umm, I got up much earlier as I had a bit of a coughing fit and I was worried I'd keep [wife] awake and she has two nights to do consecutively now, so I got up early and basically went to work [in the early morning] so she could have maybe a bit more peace and quiet umm and came back and had a small lie down for about half an hour from ten to 10.30"

(Husband, 50s, Harris family, Audio Sleep Diary)

This husband is describing how he does emotional labour of his own in order to protect his wife's sleep. Where husbands do not have to leave for work in the morning, they talk about almost always getting up before their wife returns so that the bed is symbolically hers, and so that there is not too much emphasis on the rest which they have already had. Husbands are also keen to emphasise their concern to maximise their wife's opportunities for good sleep during the day. For most husbands, this involves trying to ensure that their activities are not noisy and planning so they do not need to collect items from the bedroom during the day, and also ensuring that children, their children's friends, pets and neighbours remain quiet and do not disturb their wife's sleep. This may be quite tiring in itself and may prompt husbands to feel *"stressed out"* (Husband, 50s, Harris family, Joint interview) if this is not achieved. While most husbands maximise opportunities for their wife's sleep by

communicating and providing reminders to the children that their mother is sleeping, one husband also employs a more direct method:

> *"I put the fan on for [wife] so that the noise, she doesn't actually need the breeze, but it was just the sound to send her off and also kill any small noises in the house that might sort of startle you, and it's been a great way when the kids were babies as well I put the fan on, face it away and just they tuned into it almost, didn't they, and they were off"*
>
> (Husband, 40s, Field family, Joint interview)

This employment of the same method as used to encourage sleep for children when they were much younger demonstrates the extent of care and concern which husbands feel towards their wives during night work. This appears to reflect the level of concern which Hislop & Arber (2003a) report women having for their husbands' sleep before daytime work. Thus, it appears that role reversal between husbands and wives during night work extends beyond childcare and the completion of certain household tasks to a sense of responsibility and concern for their wife's sleep which can include doing emotional labour.

Almost all the husbands also report changes to their wife's mood following night work, which most of them relate to the need to stay awake at night while working, the lack of sleep, and general disturbance of the normal routine and body rhythms. Husbands talk about how this can involve their wife being "irritable" "ratty" "snappy", "cranky", "tetchy", "short-tempered", "temperamental", "less tolerant", "on a short fuse" and more likely to get cross with their husband and children, and to be frustrated about their own inability to complete certain tasks. While husbands do not explicitly delineate their role at these times, it is evident that their awareness of this change in mood as a result of night work and their previous experience of it has helped them to emotionally manage both their wife and the children to minimise difficulties which may arise:

"I mean if you're tired all the time, or if you're ratty or moodswings or things it is because you're tired or not always admitting that the rattiness is because you're tired... but we've all learnt over the years, as you [wife] said earlier on, when to get the superglue out"

(Husband, 50s, Daly family, Joint interview)

Here the "superglue" is part of a family joke about moderating the mother's tendency to "bite people's heads off" through being more likely to get cross and shout at her children and husband following night work. Here, humour is used to alleviate and normalise a potentially emotionally strained time.

The extra responsibilities for children, wives and household tasks which are assumed by husbands during periods of their wife's night work appear to be accepted by husbands, and do not appear challenging for them. This supports the conclusions of other studies and reviews (Duindam 1999; Marsh and Musson 2008; Presser 1995a) which suggest that when given space and time to organise things themselves, men are as competent as women in caring for children. Additionally, husbands in this study appear concerned to take on additional tasks and carry out emotional labour to minimise effects of night work for their wives. However, while the husbands in this study willingly take on these tasks to support their wives and children, it also illustrates the unfamiliarity of men with these tasks, and how tiring these tasks and responsibilities can be.

6.3.3 Freedom in activities

While husbands report having increased responsibilities for children, household tasks and in caring for their wives during periods of night work, husbands also report considerably increased freedom at this time. This covers freedom concerning activities and the general organisation of evenings, and extends to the timing of sleep. This includes freedom for husbands themselves and freedom which they extend to their children.

While they have responsibility for the household and for the children when their wives are absent at work overnight, many husbands report being conscious of a freedom which allows them to plan how these responsibilities and other personal activities are carried out.

An important theme is a sense of "*your own space*" (Husband, 40s, Robinson family, Individual interview), both physically and temporally, which allows husbands to make choices about activities and the structure of the evening in a way which would not occur if their wife were present.

This allows both greater spontaneity and being able to engage in activities which might not be acceptable to their wife:

> *"Yeah to relax in the way that we want to relax, umm although it's not a problem when we're both here together, because it's not something we argue about, but I find it more easy to sit and watch my video and enjoy my film without the distraction of trying to hold a conversation at the same time. So it's quite nice to actually be here on my own, which may possibly be why I've got into the pattern of staying up so late at night anyway, because you just need that time to sit and to relax how I want to relax after they've gone to bed. So yes I quite like it when she's on nights 'cos I can do that and I can put on my horrible gorey disgusting videos without any complaints, so I quite enjoy that"*
>
> (Husband, 40s, Brown family, Individual interview)

H	*Yeah cushions in the corner I do, a beer, a glass of wine*
W	*Are you sure you're not speaking to my boss? That's why I've got so many night.*
H	*I like this, a little bit of time, because I don't often get time, I don't ever*
W	*No you don't get time to yourself, I must admit.*
H	*I don't ever, I've always got someone there....*

(Wife, 30s. and Husband, 40s, Field family, Joint interview)

Many husbands appear to value this opportunity to spend time relaxing in the evening on their own, and several wives seem to recognise the value of this also. As such, it is recognised by many couples that this freedom for themselves is a positive side effect of night work.

For some husbands, especially in families with younger children, their wife's absence at work overnight may lead to them feeling pressured because of their additional responsibilities, and they may also feel lonely. This loneliness in the absence of their wife on night shifts may lead to fathers exercising their freedom to organise the evening and their care of the children as they wish, and this may often result in husbands giving children greater freedom than would occur if their wife were at home:

"It's partly that it's harder 'cos you're doing it all yourself, trying to get them to bed, but also when [wife]'s gone to work I quite like their company for a bit longer, I like having them round, I let them if they don't cause too much trouble, I let them stay up a bit longer"

(Husband, 30s, Lowe family, Individual interview)

It seems that in nearly all families, evening activities last longer and bedtime is somewhat later in their wife's absence on night shifts. Husbands reflect at length on this sense of freedom extending their evening, with few reaching firm conclusions on the reasons. It seems that the increased burden of husband's responsibility in a more relaxed atmosphere without their wives' usual organising structure leads to husbands fulfilling tasks over a longer period. Husbands also talk about enjoying the opportunity to spend time with their children and may allow children to stay up later to facilitate this and because they may feel lonely in their wife's absence.

One theory appears to be the absence of their wife's reminders to both her husband and children that it is time for bed, in combination with feeling more relaxed:

"When [wife] was working, yeah I'd probably go to bed later or I used to, only because I could stay up and this is like kids isn't it [wife]'s not there I can stay up [laughing]. There's no one to keep an eye on me but it was I think it's just my own body clock changing, I think it's going the other way on that"

(Husband, 50s, Daly family, Joint interview)

H I don't consciously sit here and go say "[Wife]'s at work tonight so I'll sit up and watch a film" umm yeah I think I just I don't know why, I've never really thought about

it, I just sit there, it just sort of happens I mean I do feel tired and I sit there and think about going to bed but I'll just sit there and channel flick I don't really know why actually – that must sound really strange

I No it's yeah it's just sort of relaxing and...

H No I can't even say that really, I just – you know I can't consciously say I don't want to go to bed 'cos [wife]'s not there I just sit there and watch telly, but I just most nights even when [wife]'s not here like, for example the other night I went to bed at half past 9 when [wife] was at work.

I So it can be earlier...

H Yeah I don't consciously sit there and make that kind of plan, I'm a creature of impulse I suppose and mood and if I sit there and suddenly think I'm tired I want to go to bed I'll go to bed and if [wife] happens to be at work or if she's here, then if she's here, I'll sit there and we'll talk and I'll stay up longer than perhaps I should.

(Husband, 50s, Baker family, Individual interview)

Their wife's absence at work may enable husbands to choose their evening activities and the extent of these, and to relax. Indeed, a small number of husbands comment that they prefer their wife working a night shift to a late shift, because when she works a night shift they know that she will not return until the morning and their evening will not be disturbed or their own bedtime affected by their wife returning from work and needing to wind down. However, some husbands also report a sense of this freedom during night shifts as negative because it highlights their wife's absence. This negative feeling may be behind the comments from the husband in the Baker family cited above which indicated going to bed earlier when his wife is at work overnight. Conversely, this solitude may lead husbands to extend their evening either by relaxing or fulfilling their additional household responsibilities:

"I have a horrible tendency of, I don't know whether it's 'cos sort of sorting stuff mindset or mode or - because you've had that extra activity period before [bed] umm to sort of end up up quite late [laughing], doing dunno sometimes filling out this, watching footie, or sometimes it's flitting around, sorting bits and pieces out, nothing dramatic. So like this week was umm two nights, I went to bed really quite late, umm one night I went to bed really quite early relative to what I normally do, 'cos I went - the first night I went to bed really quite late and was tired that second night. So there's probably a bit more variety than there is normally, a bit you know - unless

there's a particular reason, something I particularly wanted to watch - football - I tend to be more consistent about the time I tend to sort of turn in. Umm, so I don't know really whether that's, how much of that's psychological and how much of that not - I mean I'm ok about [wife] working nights - I'm probably not, I'm probably not totally comfortable... her working at night in the sense that I'm not as, it's sort of different and it's, but I don't sort of go to bed and lay awake for an hour because it's different, but I probably compensate for that by sometimes staying up later and therefore I'm tireder or whatever..."

(Husband, 40s, Smith family, Individual interview)

The uncertain way in which this husband describes going to bed emphasises the differences for him when his wife is working night shifts. His detailed explanations of his evening activities during his wife's night shifts and his suggestion that these activities may be affected by his feelings about his wife's absence appear to indicate a reluctant admission of the influence of his wife's absence at work overnight, including his altered sleeping pattern.

Alongside greater responsibilities for housework, childcare, and the wellbeing of children and of their wives, husbands in this study report greater freedom in the organisation and conduct of both their own and their children's activities and sleep. In delegating some responsibility to their husbands, and because of their absence, wives appear to provide opportunities for their husbands to exercise independence in how evenings and sleep occur. So delegating these tasks to husbands results in differences in expectations about the nature and timing of evening activities and sleep. While this is not explicitly discussed by husbands or by their children, it seems that these changes to what might be expected enable husbands to fulfil gendered expectations of themselves as fathers providing fun rather than core, mundane care (see Bateman 2006; Burghes, et al. 1997:55; see Oakley 1974b:179-80; Yeung, et al. 2001) while also providing fathers themselves with freedom from usual expectations. Effects on husbands' sleep as a consequence of this increased sense of freedom for husbands in their wives' absence is now discussed further.

6.3.4 Sleeping differently during wives' night work

Husbands' accounts suggest that their wives' night work has influences on their own sleep, whether in timing, duration, quality or ease of going to sleep and staying asleep. This is

particularly important because most research on night work considers only influences on sleep for night workers themselves, and where changes for husbands and children are considered, these tend to focus on shared time together and outcomes for relationships, wellbeing and development rather than any changes to sleep.

Almost all husbands report that they and their children go to bed later in their wife's absence at work, often as a consequence of a more relaxed evening or of fulfilling their additional responsibilities at this time. These accounts are supported by sleep log data indicating that both husbands and children on average go to bed later and start trying to sleep later in nurses' absence on night shifts (see 8.2 and 8.3). While husbands usually enjoy having a longer evening, they are also conscious that this breaking of the usual "rules" about bedtime has consequences in them being more tired the following day, as usually they must wake at the usual time, either for work or to enable their wife to sleep on her return from work:

> *"Good morning Elizabeth. It's Thursday [date] [Wife]'s working nights and so I was on my lonesome tonight, went to bed a bit later than usual, read a bit longer than I meant to, so I didn't get to sleep at my normal time, so it was probably just before midnight that I went to sleep rather than normally about 11, and that lack of an hour's quite noticeable, I'm feeling quite tired by comparison, there's definitely a major mental effort to get up or alert myself when the alarm went off, that's because I had various tasks during the morning that [wife] normally does which I've got to sort of fit in as well. As far as the sleep bit went umm obviously lost an hour and I woke up sort of 2 or 3 times I suppose from 5 o'clock onwards, which involves sort of checking what the time is, I was only awake for a moment or so, and then I went back to sleep, ok"*
>
> (Husband, 40s, Evans family, Audio Sleep Diary)

In addition to extending their evening activities, and in some cases getting up earlier to ensure all their household responsibilities are completed before their wife returns from work, many husbands also report that their wife's absence from the bed means it takes longer to go to sleep and that the quality of their sleep may be affected:

> *"It's Saturday [date]. I didn't slept very well at all last night, I think mainly because [wife] was working and the children were staying at my parents', so I was all on my*

own in the house, which is unusual and left me feeling a bit sort of weird, so yeah, I didn't sleep too well"

(Husband, 30s, Lowe family, Audio Sleep Diary)

Several husbands express surprise that it is more difficult to sleep when on their own and with much less potential for their sleep being disturbed. Indeed, this sense of having "*lost your right arm*" (Husband, 40s, Daly family, Joint interview) leads some husbands to exercise their freedom and responsibility to ensure they are not sleeping alone:

"We negotiate and the dog loves to be up there, he's not allowed umm and that's the other thing, quite interesting actually. I don't know why, I've always liked the kids snuggling in bed with me when they were babies and I always seemed to sleep incredibly well, probably 'cos I was so tired but if [wife]'s at work at night - the dog is not generally allowed in the bed with the two of us - he on occasions is allowed to creep up and it's having that presence with me, I seem to sleep better, I was thinking that it's a tiny dog, it's minute but it's that presence, something leaning against you or something I seem to sleep better 'cos I don't always sleep that well when [wife]'s not here"

(Husband, 50s, Harris family, Joint interview)

To compensate for her absence and to facilitate sleep, this man's wife tolerates behaviour (the dog sleeping in their bed) which would not normally be considered acceptable. In the following example, the husband permits his daughter to co-sleep to minimise further sleep disruption:

"Day 6 am, yeah went to bed about midnight last night, [wife] was working a night shift so went to bed on me own 'cos I'd done the last of my early shifts yesterday and didn't manage to get a sleep in the afternoon umm but had to wake up, got woken up a couple of times, quarter past 2 with [daughter] and then I put her back to bed, and then I think it was about 20 minutes later, half an hour later she came back in again, and I just let her settle into bed with me so that way I could get a decent night's sleep, and then I wasn't disturbed again until the alarm went off about twenty past 7 this morning, yeah so actually I had quite a good night's sleep in the end"

(Husband, 30s, Short family, Audio Sleep Diary)

This extract illustrates how the husband resolved continual disruption to his sleep by allowing his daughter to co-sleep. It is unclear whether the co-sleeping was primarily at his daughter's request (perhaps having less settled sleep because she was conscious of her mother's absence from the house) or whether there was any benefit to the husband's sleep aside from removing the continual disruption. However, given other husbands' indications that their wives' physical absence affects the usual quality of their sleep and other children's indications that they may feel conscious of their mothers' physical absence from the house during sleep (see 5.3.2), it is notable that this solution results in both father and daughter not being physically alone in bed, and resolves the continued sleep disruption for both.

While some husbands prefer their wife to be with them in bed, but do not feel their sleep is affected in her absence, for many husbands it seems their wife's absence has a noticeable adverse influence on husbands' sleep and how comfortable and relaxed they feel. Wives' encouragement to go to bed early enough to get sufficient sleep before rising rested before work the next morning has also been discussed earlier in this section. Taken together, these acknowledgments to a female interviewer and often in a joint interview with their wife are notable. These disclosures indicate the importance of their wives' gendered caring work which facilitates sleep of sufficient duration and quality (Hislop and Arber 2003c).

Husbands demonstrate considerable awareness of the ways night work affects their wife, as well as identification of both additional responsibilities and freedom as influences of night work on themselves. During night work, husbands assume responsibilities for children and housework both to ensure these tasks are completed and to relieve demands upon their wife during periods of night work. Husbands in this study exercise their gendered independence

by carrying out these tasks in a less consistent or rules-based manner than is typical of their wives. However, in carrying out these tasks in their own way, husbands demonstrate awareness of the demands of these tasks on their wives. Alongside these additional demands, husbands appear to enjoy exercising their freedom in engaging in leisure activities of their choosing and going to bed later according to timings which would not be compatible with their wives' expectations of usual joint bedtimes. In commenting on changed patterns of sleep timing, duration and quality, it is notable that husbands acknowledge their wives' usual caring role for them in facilitating timely and good quality sleep through reminders about bedtimes.

6.4 HUSBANDS' PERCEPTIONS OF NURSES' NIGHT WORK

This section discusses husbands' overall feelings and opinions concerning their wives' night work and its influences. Five main areas of husbands' perceptions are covered. Firstly, husbands' perceptions of the temporal organising structure which categorises influences of night work into preparation, during and recovery phases are discussed. The chapter then considers in detail how husbands talk about their wife's absence, their feelings about how night work may change relationships and how husbands may justify, rationalise and accept their wife's night work.

6.4.1 Night work extending before and after night shifts

Many husbands, in reflecting on changes to responsibilities and freedoms for themselves, their wives and children during periods of their wife's night work, are clear that the influence of night work in family life extends beyond the actual night shift(s) worked.

For many husbands, it appears that their wife's mood acts as a barometer on the extent of night work's influence for the couple and for the family. Many husbands mention that their wife's mood changes as her night shift(s) approach(es), and that this eases when she is actually working:

"I know she doesn't like them and I know they're long hours and I know that she's not going to be in the best of moods, so but yeah I think it's once she's in there though, I

think she's fine. When I ring her sometimes and say how's the night going she says 'oh it's going ok' I think it's more a dread thing beforehand with [wife]"

(Husband, 30s, Jones family, Individual interview)

"I think she doesn't enjoy working nights so she gets a little bit tense, she gets kind of sad before they start, generally once she's into the routine of doing 3 nights then she's ok"

(Husband, 30s, Lowe family, Individual interview)

It seems that nurses' dread of the night shifts ahead may result in negative moods and tension, which may be exacerbated by pressure as the nurse leaves during the busy evening period.

Husbands comment that the influence of night work extends through the day time sleeping period and on into the evening, when, due to tiredness and further impending night shifts, their wife's mood continues to be less positive than usual. Even once night shifts have been completed, many husbands mention that their wife takes a few days to return to normal sleeping patterns and mood, and that this may be extended if other shifts (early, late or long day shifts) must be worked soon after the night shifts:

H *But when you work nights it's got like a two day overspill, so you've got the night you're working, you're away, she'll go to bed when she gets home but trying to do anything that evening is a waste of time, because you're a bit cranky*
W *[laughing]*
H *So I think the nights, it's...*
I *So that day's no good and is the next day?*
H *It'll be the night, for instance on a Monday night [at work] then on the Tuesday, she'll try to go to bed probably won't sleep particularly well, Tuesday evening you're a little bit sort of wobberly and then that Tuesday night sleep patterns are a bit strange, isn't it?*
W *Yeah*

H *Sometimes you can't sleep and then other times become the issue, so it's not really if she does a night on Monday it's not until the Wednesday that our sort of social interaction is back to normal – is that fair?*

W *I suppose it is yeah yeah*

H *and you are, it does make you short tempered*

W *[slight laugh]*

(Husband and wife, 40s, Wilson family, Joint interview)

This husband is indicating that one night shift and the recovery time afterwards occupy around 48 hours, which he later sums up as time when *"[wife] isn't [wife]"* (Husband, 40s, Wilson family, Individual interview). Thus, one night shift of 12 hours duration has influences within the family for a period four times longer than the actual shift. Indeed, husbands report that even where their wives make efforts to try to reduce the extent of night work's influence, they are aware that this is not always successful:

"Umm I think [wife]'s very accommodating, perhaps too accommodating at times. She'll go without a sleep the next day if the kids are doing something, or perhaps she's been invited out by a friend and rather than say "no" she won't go to bed the next day if she hasn't got work the following night, if it's the end of a block of nights, she won't go to bed at all, but I don't think there's any difference in our mood"

(Husband, 40s, Moore family, Individual interview)

Even if there is minimal ostensible effect of night shifts on husbands' and children's mood, nurses' husbands are clear that night work does have influences upon their wives. In this case, the nurse may not always sleep in the day following a night shift, but the husband is aware that this has effects on his wife, whom he judges to be "*too accommodating at times.*"

6.4.2 Missing wife

Husbands appear reluctant to discuss missing their wife while she works overnight. A more common theme is for husbands to discuss their children missing their mother. For example:

"...[Pre-teenage daughter] and [younger daughter] don't like their mother working nights, they don't like either of us working at all, but unfortunately we can't do anything about that, but they particularly don't like her working nights umm [younger daughter] in particular she gets quite agitated at times because her Mum's going to work, she wants her Mum to be at home, umm, and I don't think, [wife] wouldn't go to work on nights if it wasn't for the money umm and the fact that she has to do so many a year anyway as part of her contract, if it wasn't for that I don't think she'd do them without the incentive of the extra pay, so I'm probably the only person that actually quite likes her going to work on nights, umm"

(Husband, 40s, Brown family, Individual interview)

Several husbands mention younger children feeling upset about their mother leaving for work, especially at night when they may be feeling tired and hoping their mother will be available to be with them. However, other husbands indicate that they ensure children's routines remain the same, and so children do not appear to mind which parent is present.

While there was no direct question about missing wives, the way the topic is discussed by both partners in some joint interviews suggests reluctance among husbands to admit they miss their wife during night shifts:

I	*[laughing] So what would you say about things that are different when you're doing nights?*
H	*She's not here*
W	*He misses me a lot – umm I think it's, I don't know*
H	*It's quite a difficult question to answer because you've adapted over the years*
W	*Yeah it's not*
H	*It's not it doesn't become different, because it's a natural thing for [wife] to do nights every so often, so for me it doesn't change a great deal*

(Husband and wife; 40s; Robinson family, Joint interview)

While the husband is comfortable stating that his wife is "not here" during night shifts, he appears reluctant to elaborate on what her absence means to him. While his wife insists that

"he misses me a lot", he prefers to move on the discussion by explaining how familiar he is with the routine of her working at night. Perhaps this is used to explain the possibility that he does not miss her, or to avoid stating how he feels about her absence. Another apparent theme is that husbands feel their wives miss them more than they miss their wives:

> *"I think she probably misses me at night more than I miss her... I don't think she misses me at work, no umm I think if she's sat here on her own and I'm working then she's more inclined to say "oh I missed you", you know, she was lonely or whatever whereas I tend to, I probably just embroil myself in the computer or reading or anything whatever, it's like anything but coursework, as long as I'm not doing coursework, so I probably don't miss her as much...I do miss her certainly, but not as much as I don't sit there and pine"*
>
> (Husband, 40s, Taylor family, Individual interview)

This indicates both that husbands may enjoy having some time alone in their wife's absence to spend how they wish, and also that there are gendered differences between husbands and their wives' responses to the prospect of spending time alone. This suggests adherence to gendered norms about men being self-sufficient and not needing interaction with others, especially women; and about women placing greater value on interaction with others, and especially their husband. Husbands in this study may be more content than women to spend time in solitary leisure activities such as reading or computer games. Additionally, if men miss their wives they might not feel comfortable disclosing this to a female interviewer:

> *"...as for my mood, I don't know, I think it's hard to judge it, I feel a bit, a little bit kind of lonely when she's not here, when the children have gone to bed, but again I'm fairly used to it, so it's not too bad"*
>
> (Husband, 30s, Lowe family, Individual interview)

Although this husband indicates some loneliness, he is careful to use plenty of qualifying words. As with many other husbands, this husband also states that he is well accustomed to his wife's night work, and implies that since she started working night shifts he has become less conscious of her absence. However, for some husbands, it is clear that reflecting on

the influences of night work over time, results in perceptions of night work having greater effects for families:

> *"Umm I think what it's started to focus on is the whole shift work issue and what it does make you focus on is that shift work and thinking how long [wife]'s been doing night shifts and shifts and things and it's changing the way, to be honest the relationship's not the same because you're not spending as much time with each other - definitely not - we don't do weekends you know it's one weekend a month rather than every weekend and then evenings we don't get many evenings [together] and it's something that you're not conscious of initially, but after 10 years of doing the shift work it's quite a good exercise, you suddenly think, yeah"*
>
> (Husband, 50s, Williams family, Individual interview)

This suggests that while husbands may feel the effects of night work during each period of night shifts worked by their wife, they may deal with changed patterns of responsibilities and freedom at the time, but not perceive any further influence once normal routines are resumed. However, when reflecting on night work and its influences while participating in this study, several husbands indicate that they feel night work has more pervasive influences on their couple and family relationships, and this is now discussed in further detail.

6.4.3 Night work changes relationships

Many husbands feel that their wife's night work changes the nature of couple and family relationships, especially during the actual period of night work:

"...if it runs over the weekend, family life is definitely on hold... well just the relationship, it's just not good... that's how I feel, you know it's on hold... we don't interact normally as we would if she's not on nights and she has this tension, as I've said combined with the tiredness and particularly when she works nights at the weekend, because I work Monday to Friday, the weekends are the times that I like to be together as a family and to do things together as a family, but we're not together as a family when she's working nights"

(Husband, 40s, Wilson family, Individual interview)

This sense of both the couple relationship and family life being "on hold" suggests that the absence of the wife during night work is keenly felt and has important influences on how the husband and children feel, and in how they relate to their wife and mother. Additionally, it emphasises the key roles played by nurses as wives and mothers, both in practical and emotional terms, and the way this is identified as "normal." Thus, when the wife and mother is absent at work overnight, and is then asleep the following day, and subsequently tired and tense, the usual relationships are suspended and husbands assume additional responsibilities to ensure key tasks are completed. Husbands' engagement with changes resulting from night work varies. For some, there is a feeling that the demands of this working pattern on all family members should be more fully recognised:

"...they should pay more for night shifts, only [laughing] because it changes how you are at home"

(Husband, 30s, Martin family, Individual interview)

Night shifts already attract higher pay than daytime or evening shifts. Other husbands feel that in planning night work patterns there should be much more consideration of the consequences of night work for families. Many husbands recognise that if particular efforts are not made to maintain a good relationship with their wife, this working pattern could contribute to a breakdown of their relationship:

"...it's difficult, it's not easy... if you don't chat you end up separating because you need to be together, you need to be together, sometimes I sleep on my bed together [with my wife] twice per month or once per month, so being a couple you know it's

difficult, whereas sometimes that's when you say, someone will say 'no I'm not married' because you're always at work"

(Husband, 40s, Alder family, Individual interview)

While this husband's views are accentuated by the many night shifts which he also works, similar concerns are held by many husbands. While the self-selecting recruitment method of families and the intensive nature of the study means that families experiencing severe difficulties as a consequence of night work are very unlikely to have participated in the study, comments such as the one above demonstrate awareness of the ways such working patterns may lead to couple relationship breakdown as reported by White and Keith (1990) and by Presser (2000). The views of husbands in this study also suggest that while the amount of free time spent apart is important (see Volger, et al. 1988), it is crucial also to consider gendered expectations about family members' presence at particular times and the effects of changed mood and changed patterns of responsibility and freedom for both husbands and for children during periods of night work.

6.4.4 Rationale for night work

Several husbands mention the benefits which night work may bring when weighing up how they feel overall about night work and its influences and influences within their family.

Nurses' husbands mention as benefits the higher rates of pay at night, mothers being more available for children and especially younger children, the necessity for nursing care at night, and being able to spend time on their own. For example:

"... I mean from a completely practical point of view, I suppose with the children around, we can't work at the same times so when she does do a night it does mean that she's working, our work patterns are separate and it makes it easier to manage everything else, but only in the practical value, I mean apart from that obviously I'd rather she didn't do nights"

(Husband, 30s, Lowe family, Individual interview)

"I don't think there's anything on the value side of it, I think it's probably just a thing you have to do to earn your money. I don't think there's any value in it, yeah if we didn't have to do it, I don't think anyone would do nights, but someone has to take care of people and someone has to look after the streets, part of the nature of our job I think..."

(Husband, 30s, Jones family, Individual interview)

Husbands draw on these benefits of night work to justify their wife working these patterns, and as a balance to the negative influences which they have previously identified. Alongside this, several husbands also identify that having space to relax on their own in their wives' absence at work overnight is positive for them, and may be something which they anticipate gratefully:

"...I value the time on my own because, I don't ever get time, I never have any time on my own, [wife] does because she'll have days off and although she's working around the house and that sort of thing it's nice to be on your own, I don't get that, so that's why I disappear upstairs, even here the lounge or whatever, the boys will be in here, in the computer room. I could ban them, I could say "No - I'm watching what I want to watch" but I don't like confrontation and to be honest I think "How important is that programme to me?", normally the best programmes are on terrestrial TV anyway, I wanna watch something that they wouldn't and I go upstairs, my little sanctuary, I mean I love the family unit, but to have some time without someone telling me we've got this to do, this has got to be done and blah blah blah and I'm sure the same as [wife], but I don't ever get that, so yes I do value that time, that's nice but you know we're only talking a couple of hours aren't we?"

(Husband, 40s, Field family, Individual interview)

However, it is clear that even where husbands identify benefits of night work, these are regarded more as positive side effects which may partly mitigate against negative influences, and are not given as reasons for working at night. It seems this may be partly due to a sense that while changed responsibilities and freedoms may result in some changes for themselves, these men remain acutely aware that night work can have some important and wide-reaching influences for their wives.

6.4.5 Acceptance of wives' night work

While some husbands have stronger negative feelings about their wives' night work, most husbands summarise their overall feelings about their wives' night work as a sense of acceptance. This appears to arise from consideration of benefits and negative influences of night work for themselves, alongside awareness of the significant influences on their wife and the knowledge that night work is an integral part of their wife's career and will continue to be a feature of their family life:

> *"...I don't value them, no I accept them as part of [wife]'s job that she does, it's not something I'd have [wife] doing by choice, umm I suppose with shiftwork there never is choice, is there? I don't, I honestly don't believe working different shifts is good at all but no I don't value nights, I accept them but I don't value them....I don't think the night shifts no I think it's unnatural and would prefer not, that she didn't do them but I fully accept and you can't have a situation where nurses don't work nightshifts, it's a nonsense"*
>
> (Husband, 50s, Williams family, Individual interview)

Many husbands indicate that while their wives' night work affects them, they do not regard these as major changes, except when their wife is working nights at the weekend and then sleeping during the day on Saturday or Sunday. Therefore, for many husbands themselves, night work is not regarded as a major imposition. However, most husbands are acutely aware of the influences which night work has for their wife:

> *H* *....The only time it makes a difference is when you're working nights at the weekend – 'cos obviously I've got to be quiet during the day, otherwise it doesn't really, isn't a problem, my life as such – a nasty thing to say if you think about it*
>
> *I* *So would you say there's a kind of ok it's nights, that's kind of normal*
>
> *H* *For me yeah I don't think for [wife] – 'cos you're more like oh fuck it's nights*
>
> (Husband, 40s, Robinson family, Joint interview)

Those husbands who do not feel strong influences of night work on their own lives appear to feel guilty. This guilt appears to stem from awareness that they do not share the negative influences of night work with their wife, and that they may not particularly miss their wife while she is at work overnight or that they may enjoy this time alone.

> *"Umm it's not too bad actually yeah, on a personal level it's not that bad... I think by now honestly that I've got used to it... you know if I sleep on my own there is no difference, I don't toss and turn and think she's not here. In the nicest way, it sounds awful but it's not 'cos you just get used to it... I do my best to try and make sure that she gets enough sleep the following day, so that's more of a concern for me, it's not the actual night, I know that she can manage that, it's trying to make sure she gets the sleep the following day or if I'm around or whatever to try and help as much with the kids or whatever just to make it easier on her, if you know what I mean... "*
>
> (Husband, 30s, Short family, Individual interview)

This quote from the husband in the Short family summarises the acceptance of night work which many nurses' husbands in this study express. Husbands' perceptions of their wives' night work cover both negative and positive feelings about its effects. While husbands are acutely aware of the major impacts of night work for their wives, many feel that apart from the weekends there are not major changes for themselves or their children. Most husbands conclude that they accept her working pattern and its influences, but do not value it.

6.5 CONCLUSIONS - PERSPECTIVES ON NIGHT WORK FROM NURSES' HUSBANDS

This chapter has drawn on husbands' accounts of the ways their wives' night work affects themselves, their wives and their children. Husbands' own current and previous working patterns may affect how childcare is managed between the parents, and may also influence their appreciation of the experience of night work for their wives and children. Husbands in this study are clear that their wives' night work has distinct influences which are specific both because of the way their wives' working pattern rapidly rotates between different shifts and

because of their wives' responsibilities for housework, childcare, children's wellbeing and general management of the home.

However, husbands make no mention of the influence on wives' night work of gendered expectations about household tasks and childcare. Additionally, it is important to note that husbands participating in this self-selecting sample are unlikely to be representative of all nurses' husbands, as families experiencing severe negative effects of night work are very unlikely to choose to participate, and also these husbands appear to display unusually high levels of commitment to participation in household activities. Indeed, husbands in this study appear to feel far fewer and less pervasive influences of night work than the husbands participating in Lushington and colleagues' (1997) survey of fifty nurses' husbands in New Zealand, in which 50% of the husbands reported being unhappy with the shifts and felt that this working pattern harmed their children's wellbeing.

Husbands talk about two groups of influences of night work for themselves: these include greater responsibilities in supervising their children, undertaking housework, caring for their wives and undertaking emotional labour; and greater freedom and space in choosing and planning activities, including sleep, which may also be affected in other ways by their wives' absence. Responsibilities are likely to be considerably greater for husbands when their wife works night shifts at the weekend, and the husband is then responsible for ensuring a quiet environment the following day so that their wife can sleep. While responsibilities might be considered negative and freedoms might be considered positive, the perspectives of these nurses' husbands suggest that there may be advantages and disadvantages personally to both these responsibilities and this freedom. This reflects Presser's (2005) assertion that night work may have positive as well as negative effects and that this may vary between family members.

In contrast to their children, husbands appear much more aware of the influences of night work on themselves and on their wives, but less aware than their wives of possible influences for their children specifically. This is likely to be at least partly affected by mothers' normative gendered responsibility for children's needs. However, these accounts also suggest that husbands experience greater influences of nurses' night work than do their children. In contrast with children's accounts where the general conclusion was of night work as "boring" and not affecting children (see 5.3.3), husbands make hardly any reference to night work having no effects or making no difference. Changes to responsibilities and

freedom during periods of night work appear far greater for husbands than for their children, with most husbands taking on most of their wives' responsibilities within the home at this time. Additionally, across the husbands' accounts, there is a sense of additional emotional labour, most of which is discernible in hints and tone. However, one husband is more specific:

> *"...We are a team really [husband and wife], we kind of know what we're both good at, I think umm and the children just sort of have been dragged along with us, like it or loathe it and we're quite a tight knit group really, we've had to have been 'cos the strain and the stress of the shifts, especially I think for nurses and their families is quite strong. A lot of people we know, they do feel quite stressed out by it – they don't realise what they're getting into - we know people here who've trained recently, who've got into it with the same setup we have and they suddenly realise what they've taken on, it's not just a job, you can't take it or leave it, you're either in or out of it"*
>
> (Husband, 50s, Harris family, Joint interview)

This suggests that having a wife working night shifts involves working together closely as a couple to ensure the shifts can be negotiated successfully for everyone and for the family unit as a whole. To a lesser extent, husbands regard children as working with them and their wives to ensure night work is successful. However, it seems that children's roles are generally seen as passively understanding and accepting night work and providing some assistance with caring for younger siblings or meals as required and doing more for themselves. While they may prefer their wife to be at home, as with their children, very few husbands indicate that they actually miss her when she is at work at night.

This sense of commitment by the couple and to some extent by the whole family may explain why the majority of nurses' husbands in this study give acceptance as their overall perspective on night work. However, behind this, perceptions vary, with some husbands feeling strongly about the negative influences of night work on their family and couple relationship, some husbands providing a clear rationale for their wife working this pattern, and some feeling guilty about not more fully sharing their wives' experiences of night work.

Chapter 7: Nurses' perspectives on their night work

7.1 INTRODUCTION

This chapter discusses twenty female nurses' perspectives on their night work and its place within their couple relationships and family life by drawing on audio sleep diaries, individual qualitative interviews and also joint qualitative interviews with each nurse and their husband.

As discussed in previous chapters, the literature on shift work is primarily physiologically focused and indicates that night work has predominantly negative effects for shift workers and their families. This chapter includes consideration of nurses' perspectives on the physiological impacts on themselves of their working pattern. The focus of this chapter is on nurses' perspectives about the ways their night work intersects with and influences the rest of their lives, including their family life and gendered responsibilities as wives and mothers. The chapter also includes perceptions of these women about the ways in which their night work affects their husbands and children.

The chapter is divided into three sections: the first gives a brief overview of the work and home contexts in which these women are working at night; the second section discusses in detail nurses' perceptions of the influences of night work for themselves and for their families; and the third section draws together nurses' overall perceptions of night work and its place within their own and their families' lives.

7.2 HOME AND WORK CONTEXTS FOR NURSES' NIGHT WORK

While further details about individual nurses' age, working patterns and family circumstances can be found in Appendix 11, it is important to note some specific features of the contexts in which these women undertake night work, and which may affect both the influences of night work for women and their families, and also the women's perceptions of these influences.

Most of the participating nurses emphasise that regardless of the particular shift, their work is demanding and carries considerable responsibilities. Working whole shifts without any breaks is considered normal by many of these nurses, who sometimes do not eat, drink or use the toilet while on the ward. Some of these women who had previously worked in auxiliary nursing positions testify to the considerably greater responsibilities of qualified nursing positions, where the well-being and safety of patients and staff must be attended to, often with limited staffing. For a considerable number of the participating women, job insecurity adds to these pressures:

> "*We're under a lot of pressure at the moment, we've closed a few wards and yesterday we found out we're losing another thirty medical beds so it could be us, so nobody knows at the moment whether our jobs are safe or not... more added pressure really... and because everyone's under pressure they put more pressure on you to perform, and if you don't meet your performance targets... So yeah it's not as enjoyable as it used to be*"
>
> (Nurse, 40s, Robinson Family, Individual interview)

Indeed, many nurses appeared to experience the interview process as cathartic: a confidential opportunity to express their frustrations with their working environment. In this context, many nurses indicate that being at work at night may be less demanding than the other shifts they work, because there are far fewer managers and other health professionals, no relatives, and many patients are sleeping. Additionally, many of the participating nurses who are now working on rotating shift patterns had previously worked only nights on a permanent basis, which would usually involve working two or three nights every week. This working pattern had been arranged while their children were young to enable one parent to be available at all times. Many nurses draw on these previous experiences to make comparisons with the effects of their current working pattern. Several nurses express relief that they no longer have to deal with the physiological impacts of working night shifts every week and that they usually have opportunities to sleep during the morning after each night shift. Additionally, some of the women make comparisons with other shift work. In this example, the nurse's husband currently works shifts:

> "*...He's very good he* [husband] *doesn't complain if he can't go to bed one day but I tend to... I don't know why I think this, but I think if he goes through a red light and*

he's got 2000 people in the train behind him, he is going to lose his job and we are going to be out on the street. But at the end of the day we earn the same money and I could kill someone just as easily, but I don't know what it is, I don't know if it's 'cos I've worked nights for so long now, even if I'm knackered, I still get through the night and I don't sit there at 2 o'clock in the morning thinking 'I've got to lie down', because often as well we don't get our hour's break on night duty, especially on maternity, we're so short staffed and you can't leave someone in labour and you know, so all the time we're accruing time - it's probably completely illegal - we accrue time owing and then every 6 months you get your time owing back and it tends to be if the children are ill..."

(Nurse, 40s, Short family, Joint interview)

This woman's husband is a train driver, and she notes both how she gives higher priority to his sleep, and also how there is much more strictly enforced legislation covering his work and rest requirements than for her. For this nurse, the very busy night shifts involve her caring for patients in her own rest time, and yet she then uses the time accrued not for her leisure, but to enable her to care for her children when they are unwell. While several nurses refer to the lack of provision for their own well-being on these shift patterns (and their husbands often echo this as a concern), there is also a strong sense of duty to their job caring for patients. Similarly, in their homes and among their families, these nurses' sense of responsibility to care for others is also very strong. So for these women, not only are there fewer structures designed to protect their wellbeing when working at night than in some other jobs, but the women are likely to consider the needs of their husbands and children above their own wellbeing.

The accounts of women in this study suggest that they all have primary responsibility for managing their household, childcare and undertaking emotional labour for the family. In addition to planning, supervising and carrying out daily household tasks and routines, several of the women have additional emotional and logistical demands upon them. These vary according to family members' ages and circumstances, and include supporting children in challenging situations (whether starting school, university or a particular activity, taking public examinations, managing truancy or a child's chronic health condition), visiting and caring for their own parents, and organising family weddings. Although all the participating women mention that their husbands play some part in household tasks, it is clear from these

accounts that responsibility for managing and supporting the household and its members both on a daily basis and in specific challenges rests with these women, as this audio sleep diary exemplifies:

> "*Good morning Elizabeth, it's day 5, [date], and I got up later today - 10 o'clock 'cos I'm on my night shift. So this is - I suppose the important bit of your research - had a really good sleep, and I did actually set the alarm to get up to see [son] 'cos I always try and see [son], before he goes to school and so the alarm went off about 10 past 7 but [husband] was up, so I just asked him if he could go and see [son] and make sure he was ok, so that I could stay in bed, knowing that I've got to stay up all night and won't actually get proper sleep until tomorrow morning. So woke up 10 past 7 went back to sleep and now I've got up about 10 which is unusual for me really, but umm it sometimes helps - I dunno - if I'm gonna have a 24 hour period without much sleep mm it wasn't very busy at work the other day, but you can never tell, but I've got to go food shopping today, so I've still got things to do before I go to work*"
>
> (Nurse, 30s, Taylor family, Audio Sleep Diary)

Even as she prepares to work a night shift, this nurse is considering her son and encouraging her husband to ensure that he is awake and happy. In contrast with the audio sleep diary entries of nurses' husbands and children, many of which end with a statement about it being time to get up and wondering what the day will bring, like many other women's entries, this entry concludes with a focus on the food shopping and other household preparations which must be completed before night work starts.

Both at work and at home, the demands on these women are great, with responsibility for ensuring that others are cared for often having higher priority than women's own needs. The influences of night work for themselves and for their families which the women identify are now discussed.

7.3 INFLUENCES OF NIGHT WORK FROM NURSES' PERSPECTIVES

The ways in which participating nurses feel that night work affects their daily lives and those of their families are now considered. After a brief discussion of physical influences of night work, this is structured according to the three stage temporal pattern also identified by nurses' husbands (see 6.4.1): before, during and after night work. This section covers influences of the physical aspects of night work, including women's absence at work and while sleeping, resulting changes to patterns of responsibility for household tasks, and differing moods.

7.3.1 Physical impacts

Many other studies document the physical impacts of night work for the employee (see Chapter 2). The focus of this section is women's experiences of these physical impacts and the changes which these effect for women and their families.

For nurses in this study, physical impacts of night work fall into three categories: sleep, mood and digestive changes.

During periods of night work, the timing of sleep necessarily changes, and for almost all of the participating nurses sleep duration is also reduced (see Chapter 8). Some of the participating women are sometimes able to rest or sleep briefly during breaks at night, and some also nap in the hours before the first night shift. Most of the women sleep during the following day, but many feel that opportunities for both quantity and quality of sleep are reduced compared with normal sleep at night. Additionally, several women report unpleasant digestive changes including altered appetite, and bloating. Together, these changes to sleep and digestion can result in feeling quite different bodily, and many women refer to this in their audio sleep diaries. In an individual interview, a nurse elaborates on these audio sleep diary entries:

> *"...I don't like nights, I don't like the way I feel on nights, I don't like coming down off of nights, I don't like any of the – it's not emotional, it's not psychological what is it?*

It's physical it's how you actually feel, you know, I don't like the stomach feeling, I don't like the hungover feeling I don't like any of that, and I think that's like a pre – Oh God, it's coming [laughing] it's like having a period – oh God it's on its way! [laughing] you can't stop it and I think if I don't go to sleep it's not gonna come, is it – but it does and I think it's that sort of – it's the wind up"

(Nurse, 40s, Williams family, Individual interview)

Alongside these physical feelings which the women attribute to their changed sleep pattern and decreases in both the quantity and quality of their sleep, many women are conscious of changes to their mood both during and after periods of night work, as well as a sense of foreboding before night shifts commence. While these physical changes have important influences for the women as individuals, the full significance of the influence of nurses' work at night is only apparent when discussed in the context of women's and their families' wider lives. Indeed, while physical changes around sleep, mood and digestion may be of most significance for individual night workers, women's accounts suggest that the physical impacts of night work which have the greatest effect for their families is their absence from home during periods of night work, and then their withdrawal from usual activities as they sleep the next day.

Like their husbands, women in this study clearly divide their experiences of night work into three temporal phases: preparations before night work commences; coping with the actual night shifts and the day time between night shifts; and recovering and returning to usual patterns after night shifts have ended. While working during the actual night shifts might be deemed to have the greatest influence on women and their families, this does not appear to be the case:

"*umm sinking heart because you know what effect it's going to have on you and the family and I'm sure they think "Oh God she's working nights again", umm but... once you get there and once you've seen what the board's like* [list of patients and their conditions at work] *it doesn't feel maybe as great a dread... I don't mind working at night, but it's just the effect it has physically on you and mentally, but actually once you're there and working it's ok, but it's just sort of the build-up and the next day*"

(Nurse, 40s, Daly family, Individual interview)

While most of the nurses do not find the actual night shifts too demanding, there is a sense of anticipatory change in mood, and concerns about the influences of night work clearly continue after the shift has been completed.

The ways in which these women see these physical changes to sleep, mood and patterns of absence from the home and family life having influences for themselves and their families are now discussed in three sections which deal with before, during and after periods of night work.

7.3.2 Preparing for night work

Nurses' preparations for periods of night work usually start several weeks in advance. There is considerable variation between hospitals and wards in the extent to which nurses can request to work or not to work on particular dates or days of the week, and in whether inconveniently allocated night shifts can be swapped. Regardless of the extent of choice in the night shifts worked, nearly all the women discuss what facilitates managing their sleep, childcare, household tasks, family time and fit with their partner's work pattern, depending on which nights are worked and the number of night shifts worked together. For example, some nurses prefer to work nights at the weekend so that their partner can care for their children while they sleep the following day. However, women's day sleep may be disturbed if their children remain at home, and day sleep reduces weekend opportunities for leisure time with their children and as a family.

Most wards do not issue the rota more than two months in advance. This means planning ahead has to be done tentatively and requests made for days of annual leave or to work or not work on certain days. After night shifts have been allocated, women then begin the task of arranging childcare and other activities and appointments to fit with their own and their husbands' working patterns:

> "*Yeah and thinking ahead and obviously with [son] I write in my diary if I know there's a clash of shifts [with husband's shifts] - I'll highlight it so I can pre-empt it a couple of weeks ahead. So I can ring, or get [son] to ring Mum [grandmother] 'cos he sweet talks her into it and says "Can I come round and stay?"... and try not to sort of have to do something tomorrow 'cos you can't really do anything tomorrow [after a night*

shift] 'cos you've got to sleep, so you kind of book things - like you wouldn't have been able to come tomorrow - or if you did it would have to be after 4 and you know, you kind of try and organise that kind of thing in advance, so you're not upsetting people. Umm, if there's anything important then you have to sort of work around it'

(Nurse, 30s, Taylor family, Individual interview)

Several of the women talked about having a list of possible childcare options, and working down this list in order of priority according to availability for each night shift where there were difficulties in providing child care and being available for their children as needed. This list could include husbands' flexitime or shift rescheduling, their own shift swapping or annual leave, neighbours, children's friends' parents, grandparents, after school clubs, and formal childcare such as a child minder. Throughout these accounts, it is clear that this preparation for night work and other shifts has a long lead-in time and that finding childcare solutions can involve complex planning and negotiation.

While their husbands, and other family and friends and childcare providers may be involved in looking after children and carrying out household tasks in their absence, accounts such as these make it very clear that managing the family timetable is the responsibility of the nurse, reflecting gendered expectations of wives and mothers, regardless of their employment status.

In the days before the first night shift, nurses report making specific practical preparations for their absence at work and anticipated changes to their mood. This often includes increased cleaning, washing, shopping, planning and preparing meals, as well as ensuring husbands and children are prepared for specific activities and events during the night shift period. This preparation ranges from ensuring meat is defrosted, packed lunches prepared, P.E. kits are ready to be taken to school and preparations are in place for weekend meals with the extended family. Accompanying these preparatory household tasks, many nurses report "*that feeling of dread before you start*" (Nurse, 40s, Wilson family, Individual interview) which anticipates the responsibility of staying awake and working all night, physical influences of night work and concern about the wellbeing of their family while on night shifts and the day after.

On the day immediately before their first night shift, nurses' accounts suggest there may be a conflict of competing interests, as women balance the need to ensure "*everything is done*" (Nurse, 30s, Jackson family, Individual interview) with their own physical needs for additional sleep and not being too energetic. Women find that attempting to sleep later the previous morning or napping in the afternoon or evening before the night shift begins may be particularly difficult. This is because of the doubly demanding management of the family and household: they continue management of their family's daily routines, including school delivery and collection and evening activities and meals, while undertaking additional preparations and providing instructions for the following day. These demands are illustrated by the following extract from an audio sleep diary:

> "*Umm I've had a small sleep - probably about half an hour dozing on and off. Still very, very tired, fed up, don't wanna go to work, not looking forward to it. Usual rush trying to get things ready and get cleared up and then get out the house ready for work*"
>
> (Nurse, 50s, Patterson family, Audio Sleep Diary)

Leaving the family home during the busy family evening period appears to be a further source of concern for the women. During this period, women prepare meals and clear up quickly before leaving for their night shift. In altering meal timing before night shifts (as occurs in some families) and in rapidly completing the meal and clearing up afterwards to minimise additional responsibilities for their husbands and children, this also emphasises the effects of women's absence from the family home during night shifts.

The preparatory phase before night work has important influences for nurses. During this period, many feel a sense of foreboding about the forthcoming night work and its influences for themselves and their families. Their responsibility for managing the household is accentuated, as they seek to minimise night work's influences for their families by planning childcare and activities and undertaking additional household tasks, alongside daily tasks and their own needs for preparatory sleep.

7.3.3 During periods of night work

While some nurses report that they find it difficult to stay awake, particularly during the first night shift, most participating women appear to find it easier to work during the night than they had anticipated, and experience the actual night shift as less demanding than the day before, the days in between night shifts and the daytime after the last night shift.

Whereas sleep would be the first priority after a night shift for many employees, almost all the participating women report that other responsibilities must be handled before they can sleep. For some, this involves a small amount of tidying up or other household tasks, but many women must also deliver their children to school before sleeping:

> *"Monday [date] at quarter to two in the afternoon. I came home from my night shift feeling quite tired umm but couldn't go to bed straight away 'cos I had quite a few things to do and needed to take the children to school, so by the time I'd done that I went to bed at about quarter past nine. I'd actually woken up quite a bit having walked down to school, I was quite fidgety for a while and it probably took me about half an hour, three quarters of an hour to actually fall asleep. Umm I remember waking up very briefly, a couple of times, umm just from background noises, as I'm quite a light sleeper, but managed to doze off again eventually, woke up again about quarter past 1? Not quite sure what woke me up um I set my alarm for 2 o'clock but couldn't get back to sleep so decided to get up, feeling a little bit groggy"*
>
> (Nurse, 40s, Brown family, Audio Sleep Diary)

In addition to the challenges of sleeping in day light during the morning, this mother has found that having responsibility for walking her children to school has resulted in her feeling more alert. Indeed, Revell and Eastman (2005) recommend use of sunglasses in the morning after night shifts to minimise early morning light exposure which can increase alertness and render day time sleep much more difficult. This mother must also ensure that she wakes in time to collect her children from school at approximately 3pm and then to care for them in the early evening.

Although during school holidays and at weekends there are no school runs to curtail the timing of nurses' day sleep following night shifts, there is a need to organise daytime childcare to enable sleep. If children are at home (even if they are in the care of someone else), day sleep may be disturbed indirectly or directly through children of any age (and sometimes also husbands) forgetting that their mother is sleeping following night shifts. This disruption to day time sleep may occur where children make noise playing a game or music, or where they want to ask something of their mother. The women thus indicate that their day time sleep affects their children. Children's expectations of their mother and her availability even while sleeping thus also affect her experiences of night work.

Nurses' sense of the influence of night work and their sleep the following day is also demonstrated by their willingness to sacrifice their own sleep opportunities for spending time socially with their partner and children. This often occurs at weekends, particularly when there is a family gathering.

> *"Went to bed at half past 9 this morning [Sunday]. I was late coming home [from work] because there were things that I needed to sort out before I came home, so I was quite late coming home I think it was about quarter to 9 before I got home so it was half past 9 before I got into bed. I actually slept fairly well but it wasn't for long enough – I did get [husband] to wake me at 2 otherwise I feel that I've missed out on the whole weekend, because I've worked Friday and Saturday so I did ask him to wake me and I did feel really groggy when I woke up, muzzy head and I did doze for a short while before getting up at 3 o'clock uhh apart from that I didn't actually wake I didn't have to get up for the loo which is good umm and now we're off out to [town], so at least I feel that I am getting a social day or part of the weekend with [husband] despite having worked umm Friday and Saturday night"*
>
> (Nurse, 50s, Baker family, Audio Sleep Diary)

Despite the delay to her daytime sleep through working a longer night shift than usual, this nurse continues with her plan to spend time with her partner, and despite feeling that she has not had sufficient sleep, getting up and spending time with him enables her to feel less isolated from him while working a block of nights. Although this is not stated in this particular account, it seems likely that women's decisions to sacrifice their own sleep for time with their

husbands and children is also likely to be influenced by expectations about spending time with their family.

One of the effects of having less sleep than usual and at a different time is changes to women's mood and their resilience to the challenges of daily family life. Perhaps women's anticipation of this change of mood is part of the reason both for their sense of foreboding prior to night work, and for their efforts to plan and complete as many household tasks as possible in advance:

> "*...I'm a bit of a control freak and I like to be in control of everything, I like to know where things are – which is why I think this place runs quite smoothly when I'm not here, 'cos everything is done and you know and I don't like the feeling muzzy – and I got really cross one of the days... I was supposed to be picking up the kids and I forgot, and I was so angry 'cos I don't forget things like that...*"
>
> (Nurse, 30s, Jackson family, Individual interview)

It appears that changes to their sleep pattern during night work affect women's mood, memory and mental and emotional resilience. The women in this study deeply dislike this, and it seems this is primarily because it affects their ability to manage the household themselves in the way which they feel is expected:

> "*...it depends how cooperative they're being, most of the time I'd say I struggle because having two teenage girls that at the best of times will push your patience to the edge of reason, I think it's a struggle to try and I think I'm definitely less consistent with them you know, I might as well be honest for the point of the study, but I can come in and my patience level would be at zero whereas normally I'll be like "come on girls, let's go" you know "5 more minutes" [*sing-song, happy voice*] but I'm like "come on, let's go" [*loud, angry voice*], "I want my bed" [*amused*], 'cos that is hard...*"
>
> (Nurse, 30s, Jones family, Individual interview)

This nurse acknowledges that her patience is impaired during the day between night shifts and that she is less consistent in dealing with her daughters. This nurse goes on to explain

that she telephones her daughters before leaving work after a night shift, giving them an estimated time for her return and warning them to be ready for school on time. Despite this planning and communication of specific instructions when she is already very tired, the nurse is disappointed at her daughters' lack of response to her request.

The contrast between nurses' expectations of themselves and of their husbands and children in completing household tasks is striking, and reflects gendered expectations that mothers and wives will manage and be responsible for carrying out the great majority of household and childcare tasks.

All the women in this study delegate at least a small number of household tasks to their husbands and children while they are absent at work overnight and sleeping during the day, although the majority of women continue to prepare the evening meal between night shifts. While some husbands may take on greater responsibilities, in most families only a small part is required of husbands, with their wives specifying exactly what should be done, and perhaps beginning the task themselves. For example, some of the participating women ask their partner to telephone them to ensure that they are awake and ready to collect their children from school in time following day time sleep. Women's accounts also suggest that husbands and children may be more likely to make cups of tea for them and generally to be more caring towards them than might be expected otherwise:

> "*...They were just walking off to school and bless her she* [her daughter] *turned round and came running back and gave me a big hug and it was so lovely – little things like that which are so important.....We do have quite a routine and the kids know that, I mean they're big enough now to be doing their own stuff and I tend to leave a list for [husband] of things that need doing and he'll do as much around the house as I do, so yeah it all just works...*"
>
> (Nurse, 30s, Jackson family, Individual interview)

This daughter's sensitivity to her mother's absence at work overnight is interpreted in a very positive light by her mother, who says "bless her" and is clearly very touched by her daughter's thoughtfulness. She also indicates that despite her management of the household and preparation of a list of tasks, her husband does as much household work as she does. Together, this suggests that in contrast with the expectations which they feel for

themselves, women feel that they should be grateful for any tasks undertaken by their husbands and children while they are working at night and unable to do the tasks themselves.

Additionally, there is a sense that women feel they should monitor their husbands' and children's assistance:

> "*They're very good, they don't come upstairs or if they do, they come up really quietly they don't come in or anything. Occasionally we've got a babysitter in, one of [husband]'s train driving friend's daughter, she's just coming up 18, she'll come and play with them, but occasionally the children will squabble or something and you can hear it or 'cos our bed's right over the table, if they're not eating their lunch and [husband] shouts at them. I mean he tries not to, but I can hear it going on right underneath me and you lie there listening out for what's going on you know*"
>
> (Nurse, 40s, Short family, Individual interview)

Even though this woman has previously asserted her full confidence in her husband's ability to supervise and care for their children, she also indicates that because they are in the same house, she is "listening out" for what is happening, as well as being woken by any particularly loud noises. Part of the reason for this awareness of the children while trying to sleep may arise from the mother's familiarity with continually caring for and checking on her children. Additionally, it seems that for some women, sleeping during the day promotes a strong sense of guilt:

> "[before a first night shift] *it depends what's happening school-wise, if it's a Saturday then I'll probably sleep in but if it's a normal day then no, I have to get up, make sure [younger daughter]'s got the bus or she'll want a lift round to the bus stop but if she knows in advance that I'm going to sleep in fine but if it's a normal working day and [husband]'s not on holiday or away then he disturbs me getting up, sometimes I'll try and sleep in a bit, but it's not the same I don't often go back to sleep and you feel guilty you're in bed you should be up doing jobs and there's usually plenty of jobs to do*"
>
> (Nurse, 40s, Daly family, Individual interview)

"...I feel really guilty about sleeping during the day, 'cos it's - well I've got too much to do - and especially at the weekends when the kids are at home and [husband] is at home you know I want to spend my time doing things with them, I don't want to be asleep so I try and make sure I get woken up lunchtime-ish, at least I've got all afternoon before I have to go back to work"

(Nurse, 30s, Jackson family, Individual interview)

"the time is 8 o'clock on [date] just about to go to work I woke up feeling very sleepy and tired however I managed to get through it by forcing myself to be active and my main worry was that my son was watching telly all day, he hasn't even had a shower 'cos nobody was supervising him..."

(Nurse, 30s, Martin family, Audio Sleep Diary)

Even when preparing for night shifts and after working at night, when they both want and need to sleep during the day, these women feel guilty that they are sleeping rather than up and caring for their children and doing other tasks around the home. Similarly, the effects of changes to other aspects of daily routines during periods of night work may also promote a sense of guilt:

*"Our food was appalling wasn't it?! [*laughing*] reading it [the food diary for the study] [*laughing*], when we looked back through it it's like oh my Lord! It's when I'm on nights. When I wake up - that night - I don't cook 'cos I don't have time, so it would be, I usually buy filled pasta for [son] and things like that, because he can [prepare and] eat those or we've got plenty of things that he can microwave, you know, or just 'cos [son] doesn't cook either, he's just lazy- [husband], if it's a weekend sometimes he cooks but very rarely, he'll take [son] for his lunch at a café and they'll have lunch at a café and I'll just get something to eat when I get up, so when I'm on nights we don't eat properly..."*

(Nurse, 40s, Robinson family, Individual interview)

Amid her guilt about her perception of the poor quality of food consumed by herself, her husband and son during periods of night work, this woman is explaining her efforts to ensure they prepare and eat hot food of a reasonable quality, even though she isn't able to maintain

her usual standards of freshly prepared meals. However, this woman's own condemnation of their food intake as "appalling" and her explanation of the efforts made to moderate this indicate that the importance of her normative identity as a "good mother" as she continues to assume responsibility for food consumed by her family, even while working night shifts.

While participating women appear to experience much more negative influences of night work than do their husbands and children, several of the women also indicate that alongside the responsibilities which night work brings, the difference in their sleep patterns compared with those of their husbands and children may provide some relief from usual night time responsibilities. When husbands and children are away from home during the day, although the need for availability by telephone remains, women are exempt from usual responsibilities of night time care for children (Venn, et al. 2008) and facilitating husbands' sleep (Hislop and Arber 2003c).

Although sleeping during the day may be of reduced quality and duration and may be more prone to disruption by others and a sense of guilt, many of the women enjoy the release in being able to sleep alone in an empty house where there are no other immediately presenting responsibilities:

> "*Yeah yeah after a night, oh God yes and then I can forget about everything, go to sleep [*laughing*] that's all I've gotta do... I value, I really like, I love the feeling when you finish - it's fantastic the feeling when you're going home especially if it's raining, it's horrible and the weather's nasty and you go home and you think all I've got to do is get into my pyjamas and get into bed that's all I've got to do. So that is – that feeling is lovely when you've finished...It's much better than when you've had a hard day at work during the day and you get into bed, that feeling'll be a hundred times [*laughing*]*"
>
> (Nurse, 40s, Wilson family, Individual interview)

Similarly, some women also describe how working at night and the lack of sleep allow them certain privileges within the household, which allow them to enjoy being slightly more indulgent than would be acceptable otherwise:

"It's... the afternoon of the [date] June, umm, I went to sleep very quickly and like a log til I woke up about 5 to 1 and [husband] brought me up a cup of tea at 1 o'clock with the paper. So, I've just been lying here reading the paper for about 20 minutes and I'm about to get up. The more nights I do the better I sleep, and it's blissful [laughing], that's about it really"

(Nurse, 40s, Evans family, Audio Sleep Diary)

Part of the freedom to enjoy being slightly more indulgent when feeling the physical influences of night work is other family members' recognition of these privileges, together with temporary and partial exemption from expectations about certain tasks. This is further exemplified by the circumstances experienced by the author in one family home when individual interviews were being conducted with the nurse, her husband and their teenage daughter on an evening immediately after a night shift. The woman had been asleep during the day and had come downstairs in her dressing gown to watch television in the living room before returning to sleep that night. She was able to select and watch a television channel of her own choice and, so that she did not need to move, her interview was conducted in the living room with the television muted, and her husband's and daughter's interviews were then conducted in the dining room. The husband's and daughter's willingness to comply with the nurse's request to maximise her comfort, and also the acceptability to everyone about the woman being interviewed in her dressing gown by someone she hardly knew demonstrate the special status which may be accorded to women in compensation for the negative influences of night work, and in particular the physical influences. While this interview was conducted after all the night work had been completed, it is likely that there was a similar pattern for the late afternoon and early evening between night shifts.

Effects of night work in the period after night work is now discussed, and while there are some similarities between these two phases, nurses' accounts suggest some distinctive influences during night work (between and immediately after night shifts). Night work has important physical influences on the quality, duration and timing of these women's sleep with consequences for their tiredness levels, mood and general sense of physical well-being. Combined with their absence from the home while at work overnight and their partial unavailability while sleeping during the day, night work has influences on women's ability to manage and carry out household tasks as usual, with some of these tasks being delegated to husbands and children. However, it is clear that women retain overall responsibility for

these household tasks, and that while some women feel some modest sense of freedom in reduced expectations of them during periods of night work, they may also feel guilty about sleeping during the day and not being able to complete other household tasks or spend time with their children.

7.3.4 Recovery from night work

Following the completion of the last night shift in a block, most of the women in this study sleep until lunchtime and despite wanting to sleep for longer they then get up as they are concerned that sleeping for any longer might affect their ability to sleep that night. This is a particular concern where women are working an early shift or a long day shift which starts approximately 24 hours after their night shift has ended.

After all the night shifts have been completed, and often for a few days afterwards, all of the participating nurses continue to feel the physical impacts of the changes to their sleep due to working at night. This may include feeling tearful and "*much more pathetic...this horrible lethargic feeling of your body wants to drag you back to bed and go to sleep*" (Nurse, 30s, Jones family, Individual interview) on the next day after the last night shift, and this may persist for a few days.

Just as during the period of night work, these persisting feelings of tiredness and low mood may have influences on the way women interact with other family members:

> "*Kept feeling very weary at work today, especially around about 11 o'clock and the day has seemed like it's taken forever. Had to go and cut [husband]'s mother's grass and the boys were there with me [husband] had started to do it but his hay fever got bad so I went to take over, and I was very quickly annoyed with them when they were not helping me, and just blocking the way and fighting with each other and generally being irritating. I think I've had a very low tolerance threshold today which is the first time in this 10 days that I've felt like this umm I'm really weary and getting ready to go to bed and having hot chocolate just to make me sleep well tonight hopefully*"
>
> (Nurse, 40s, Evans family, Audio Sleep Diary)

Mothers' tolerance of misbehaviour by their children may be lower, thus affecting how women feel about their ability to meet gendered expectations about caring for and regulating their children's behaviour in a calm manner.

The changed sleep patterns may also have ongoing effects for women:

> *"Hiya this is day 9, it is 8.30 in the morning. Umm not a bad sleep woke up at one point in the night and lay awake for quite a while. Unfortunately it seems that I sort of switched into wide awake mode and had trouble getting to sleep, I was rather restless, I probably irritated [husband] but never mind, did manage to get back to sleep then woke again once and woke again at seven and got up fairly soon after that. My actual quality of sleep when I managed to sleep, I wasn't too bad"*
>
> (Nurse, 50s, Harris family, Audio Sleep Diary)

In this extract from an audio sleep diary several days after two consecutive night shifts, the nurse explains how the effects of night work persist. Although she has had several nights of night time sleep following night shifts, she feels that the pattern of staying awake at night to work and then sleeping during the day has disrupted her usual sleep pattern. The result is that she still finds herself in "wide awake mode" after waking in the middle of the night several days later.

Several women refer to poor sleep when entering "wide awake mode" or "night work mode" on the first and sometimes subsequent night after night shifts end. They describe this as not feeling able to sleep at their usual bedtime or in the early hours, and that this may be more likely to happen if they try to go to sleep at a later time than usual. Nurses interpret this as occurring because they have already slept the previous morning and so are not sufficiently tired, and also because their body is accustomed to being awake at this time while working a night shift. This inability to sleep may be disturbing to re-establishing their night sleep pattern and may result in them feeling very tired the following day (particularly if they must work an early or long day shift). In addition to this possibility, based on previous experiences, women and their husbands often report anxiety that it will be difficult to sleep at night after night shifts, and this may in turn render it more difficult to sleep. These accounts suggest that nurses are experiencing the effects of changes to their bodies' circadian

rhythms and sleep patterns, and that there may have been some temporary adaptation of their circadian system to night working.

In addition to these continuing physical impacts of night work, as well as affecting how nurses feel physically and the likelihood that they feel able to complete other household tasks as usual, several women indicate that following night shifts, they need to catch up on household tasks:

> "*Felt really lethargic this morning as I always do after finishing nights. Normally on the last night I can get through the next day with minimal sleep but it does take its toll the following day and like I say feel lethargic. Will go to the gym later today, but having worked the last three nights - although [husband]'s fab in the house - there's certain things, like a lot of tidying up to do, I'll battle on with that first.*"
>
> (Nurse, 40s, Short family, Audio Sleep Diary)

So while they struggle through their tiredness to re-establish their night sleeping pattern, women report that not only do they need to continue to undertake all the usual daily household tasks, but they must also "catch-up" on the things which were not done during the night duties. The extract above confirms that while women are grateful that their husbands and children perform certain tasks in their absence, these women as household managers need to check that all is as they feel should be, and to complete general tidying up and other tasks which could not be specified and which their husbands and children had not seen as important or even necessary.

Women's accounts suggest that the influences of night work for themselves are important and extend far beyond each night shift. Worked in the context of other shifts, night work takes on a particular significance, with far-reaching physical effects on sleep, digestion and mood. With their responsibility for managing the household, childcare and the completion of household tasks, women identify three phases of night work, with which their husbands also identify. Preparation for night work involves women planning the timing of night shifts and appropriate childcare. Immediately prior to night shifts, women then balance their own need for preparatory sleep and rest and their anxieties about the period ahead with preparing and giving instructions about household tasks for while they are doing their night shift or asleep the following day.

Participating women in general do not find actually working the night shift itself too challenging. However, between night shifts they must negotiate between their own tiredness and need for sleep with guilt about needing sleep, and needs to care for their children and perform other key household tasks. Alongside these challenges, several women identify a small sense of exemption from usual responsibilities in sleeping alone in an empty house during the day, and in them being permitted to be slightly more relaxed when they wake than would normally be expected. After night work has ended, women continue to feel the physical effects of night work as a result of changes to their circadian rhythms. While experiencing these continuing effects upon their sleep, sleepiness and mood, women assume additional responsibilities to ensure they catch up on tasks which they did not complete during their night shifts (for example, washing and shopping) and also to re-establish their usual standard in completion of household tasks and expectations of husbands and children in order to ensure their identity as a "good mother" is maintained.

7.4 NURSES' PERCEPTIONS OF NIGHT WORK

Having discussed influences of night work from nurses' perspectives, this section now considers more generally how participating women feel about their night work and its place within their family lives.

This discussion has three main themes: participating nurses' overall opinions about night work; their perceptions of the influence of their absence at work overnight and sleeping during the day on their husbands and children and relationships with them; and further discussion about the importance of 'being there' for their children and husbands in the context of night work.

7.4.1 Nurses' overall opinions about night work

While there is a range of overall opinions among participating nurses concerning night work, all of the women identify negative influences, and no nurses gave their overall opinion of night work as predominantly positive.

For many of the participating women, negative and continuing physical impacts of night work are given as the main reasons for "*detest*[ing]" (Nurse, 40s, Robinson family, Individual

interview) and "*dread*[ing]" (Nurse, 50s, David family, Individual interview) night work. It seems that the additional planning and other delegation and management of household tasks to minimise disruption to other family members' routines may also contribute to this overall negative opinion.

Alongside predominantly negative opinions about night work, several nurses identify positive aspects of undertaking night work in contrast with their other shifts. Many women indicate that working at night gave them more daytime opportunities to be available for their children, particularly when their children were young. Nurses are also grateful for time at work during the night when they can complete paperwork with minimal disruption, where there are no relatives and where they have more responsibility:

> "*I prefer, in many ways I prefer the work [at night], there's no relatives around, there aren't any doctors around, you're more responsible, it's more - the work itself is more nurse-led, so whereas during the day if somebody became ill you'd just like get a doctor, at night you don't, you have to sort of sit there and weigh it up yourself and work out what's wrong with them, why it's wrong with them and progress yourself which is nice, but there's no, there's not enough positives in working nights that I would do them, by choice yeah no, even though the work itself is nicer*"
>
> (Nurse, 40s, Williams family, Individual family)

This account suggests that working at night often provides individual nurses with more opportunities to take responsibility for patients' well-being and for exercising their professional skills and judgement. Relatedly, several nurses indicate that it is important for them to "*grin and bear it*" (Nurse, 50s, Davis family, Individual interview) by working nights to feel fully part of the nursing team providing 24 hour care:

> "*I don't enjoy it and I never ever probably would enjoy it but umm you know I get through I cope with them and I know that everyone's got to do them and I think that's something that's different on the [ward] everybody has to do them, regardless of what rank they are everybody has to do them, everybody understands how difficult they are*"
>
> (Nurse, 40s, Wilson family, Individual interview)

"I don't like working nights [laughing], no I get very down and think "Oh no, I've got to go to work tonight I've got to try and stay awake uggghh" I don't like doing them....I think it's got more difficult because they're more frequent there's more of them and the family don't like it at all, I mean they said to me last night "Oh no, have you got to go?" and [husband] said can't you say you're ill and you can't go – he always says that [laughing] I said "No, I'll have to go" you can't let them down you know at the last minute"

(Nurse, 50s, Patterson family, Individual interview)

These accounts suggest that these women feel that despite negative influences for themselves and for their families, working at night is part of their responsibility to the nursing team.

However, almost all of the participating women indicate that they would prefer not to work at night.

"...It's not right, people shouldn't be awake at night, you're meant to be in bed asleep umm but I just accept it as part of my job. It's a 24 hour service and I have to take my turn... when you're on nights there's this thing about thinking I must make sure I have a sleep this afternoon, I must get a rest, then you're at work all night, then you're asleep during the day or at least for the first half of the day, you know when you wake up you're not gonna be a whole bundle of fun so it affects more than just the shift that you're working – it almost takes up a day and a half and a night, so I if I didn't have to work them I think I'd be a happier person, but I just accept it's part of my job"

(Nurse, 50s, Baker family, Individual interview)

This account suggests that night work creates a general negative feeling which extends beyond the actual night shifts and persists for several days, and which results in nurses feeling less happy than they might be, and that this in turn affects their husbands and children.

7.4.2 Perceived effects of night work on husbands and children

Beyond feeling that their husbands and children may be affected by their negative moods and changes to who completes certain household tasks, women make some references to their husbands and children missing them. However, in contrast with husbands' and children's accounts of feeling their partner or mother's absence, there are hardly any references to women themselves missing their husbands and children. As nurses are in paid employment during night shifts they are unlikely to miss their family as they are focused on their work. At weekends, when women may be more conscious of being apart from their husbands and children while they sleep, we have seen that women often get up earlier so that they can spend joint leisure time with their family.

However, some women also indicate that they are conscious of not spending time with their partner during periods of night work, and that this may have negative effects for their relationship.

> "...*when you only have three or four hours in bed you don't want to faff around [i.e. sex] for half an hour [laughing], or he comes in at 2 o'clock in the morning, I'm sound asleep...*"
>
> (Nurse, 40s, Short family, Joint interview)

> "...*I think we need to re-analyse it really just the time for ourselves, we're so rarely in. I mean this week we're in three evenings [together] which is unheard of, completely unheard of and you know just things like your sex life really, you go for a week without you know, physically being in bed together. You know, it's just not healthy really is it, but we've almost forgotten what that is...*"
>
> (Nurse, 40s, Short family, Individual interview)

This suggests that women and their husbands may become so accustomed to not spending quality time together that while this is not a problem for them, their relationship might not be as intimate or as strong as it could be, and yet they may not be consciously aware of this.

Several women talk about how when they spend time with their husband, this is spent organising things together (for example, household bills and insurance). Accordingly, many women feel that: "*unless you have an understanding and adaptable partner it's bloody hard, it's hard work anyway*" (Nurse, 40s, Daly family, Individual interview). It seems that husbands need to display understanding that the couple relationship is "on hold" (see husbands' accounts in 6.4.3) with reduced potential for shared time, emotional intimacy and sex; and that husbands need to be willing to take on household tasks and supervise children as requested and as necessary, and to support their wives through the period of night work.

Despite this, it is very clear from women's accounts that they feel that most of the negative influences of night work fall on themselves, and that in most cases, women do considerable extra planning and make additional efforts to minimise the negative influences of night work for their husbands and children. The limits of their husbands' inclination to take over household tasks, and the extra efforts which women make for their husbands and children are illustrated by this extract:

N *I mean [husband] says, love him, bless his heart, when he gets up in the morning he wakes up about quarter past seven, turns the alarm off and resets it because he wants another half an hour in bed. So that's fine, but he sets that time and the next time it will wake me up, then he'll go out and have a bath and then he'll come back and sit on the end of the bed, have a wash, have a dry, get up, put the light on to find the shirt and tie that he wants and then go and it's like you've woken me up, you know, if you're managing to fall back asleep then he wakes you up in between, otherwise you're just awake...so when he goes, I do go back to sleep*

I *That sounds quite a contrast, 'cos you come and get dressed down here*

N *I do, when I'm at work I've got everything the night before in a bag, like all my underwear in a bag and then I've got all my uniform hanging on a coathanger, so what I do, the alarm goes off, I get out of bed straight away, reset it for him and then I pick up all my bits and then come back down, come down here and then I get dressed down here, because I don't think it's fair to keep him awake at six o'clock in the morning – I will come down here, yeah*

(Nurse, 40s, Robinson family, Individual interview)

This contrast between the way that this nurse and her husband conduct themselves when they need to get up for work in the morning before the other person, is striking, as is the way in which the wife discusses the differences. The wife is careful to ensure that she disturbs her husband as little as possible when she gets up for a long day shift, and does this by preparing her clothes the night before, so that she can leave the bedroom quickly and dress downstairs. By contrast, when her husband gets up around an hour later to prepare for work and she is working a night shift that night or is not at work that day, he continues as if she were getting up at the same time. While she identifies these differences, the nurse does not judge her partner nor does she assert her thoughtfulness or need for sleep.

This suggests that different sets of gendered expectations operate for the nurse as a wife and mother, and for her husband. It is possible that despite this pattern being established within the household, she may feel that because she wakes at an especially early hour for her long day shift and then sleeps later when she is not working, her husband should not be expected to consider her needs as these are not 'usual' patterns worked by the majority of the population. However, it seems more likely that this difference emanates from different gendered expectations about sleep needs and caring, with the woman giving a high priority to protecting her husband's sleep because of gendered caring and concern about him going to work (see Hislop and Arber 2003c).

7.4.3 Influence of night work on "being there" and "being Mum"

Women in this study also mention that expectations about "being there" and "being Mum" have implications in the context of night work. Garey (1995; 1999) in a study conducted in the USA with mothers who work at night in hospitals, indicates that being available to their children is essential to being seen as a "good mom". Night work is seen as enabling mothers both to be active in the work force, and also to be available for their children as they are symbolically available to their children during the day, even while sleeping.

All of the women in this study work rotating shifts and therefore work early, late and long day shifts as well as night shifts. Availability for their children during night work does appear to be an important theme for these women. Several women mention that they will leave phones activated and by their beds while they sleep during the day, so that they can be contacted if they are needed by their children. In addition to this, several women also

indicate that despite the pressures of work on the ward, their children and husbands telephone them at work during the late evening or night if they are needed or even if they are uncertain about something (for example, if a key piece of clothing cannot be located, checking at what temperature something should be cooked, and also in more serious cases such as when a daughter was brought home by the police after a man had tried to encourage her into his car).

In addition to nurses' availability while absent from the home while at work overnight and while sleeping the following day, many of the women find that their changing working pattern enables them to do as much childcare as possible, with their husband and sometimes other family members being responsible for the children when they are at work, and formal childcare only being used when absolutely necessary. Most of the women feel that this availability is not just convenient and reduces childcare costs, but enables them to be involved in their children's daily lives, as they deliver and collect them from school several times a week, and other children visit their children at home after school. However, women are also conscious that while night work enables them to be available for their children, this may take its toll on themselves:

> "*I don't think there are any positives for family life for people doing nights – I think the only time it is of value is if you've got young children and then you want to be around to take them to school and things – I do think people work too many nights – they use it because they need to do it for the children and then they don't get enough sleep, you know, they'll take them to school, go home, go to sleep maybe quarter past nine, but then they've got to be up at half past two to pick them up again and I don't think they get enough [sleep]*"
>
> (Nurse, 50s, Davis family, Individual interview)

Some women indicate that because of the expectations that they will "be there" and "be Mum" to their children, and their desire that night work should not have negative influences for their husbands or children, they may take on tasks which are not strictly necessary, and which result in them feeling the effects of night work even more keenly:

"Day 3 morning, just got in from a 12 hour shift, very tired umm counting down the minutes before my daughter goes to school, so I can go back to bed..."

(Nurse, 30s, Field family, Audio Sleep Diary)

" I don't have to, quite honestly they [children] can cope to get themselves to school but I'm quite soft and run them [drive them] *around [to school]..."*

(Nurse, 30s, Jones family, Individual interview)

In both these cases, mothers physically struggled to keep awake so that they can meet expectations about taking their children to school. This is despite the women indicating that teenage daughters in the Jones family are capable of getting to school on their own and the daughter in the Field family walks to school on her own on days when both her parents need to go to work early. However, the mother in the Field family expresses feelings of guilt about this arrangement, which perhaps explains her concern to take her daughter to school when this is not impossible. However, this also emphasises that women regard their sleep as less important than their paid work or the physical and emotional labour which they carry out for their husbands and children. Accordingly, women feel that sleep required to work and to care for their families can be reduced to enable them to 'be there' for their children and to perform the tasks which would normally be expected of them as mothers.

Perhaps one part of this need to meet normative expectations of them as wives and as mothers is to ensure that the household is managed appropriately, despite the disruptions of night work. Several nurses discuss their dislike of their husband performing certain tasks such as shopping and washing, as they are concerned that their husband might not complete these tasks to their standards:

"Ooh I get very manic, like today I get up and I have to go to [supermarket] to do the shopping and [husband] will say "I'll do that", and I can't afford for [husband] to do the shopping 'cos he spends far too much, and he takes too long, because I'm a bit of a - I like it to be done my way..."

(Nurse, 40s, Smith family, Individual interview)

For this woman, when she gets up at lunchtime after her final night shift, she sees it as essential that she immediately completes all the tasks which have not been done during the period of night work. This is so that the household continues to be run according to her rules, which enable her to manage the household, and maintain her moral identity by "being there" as a "good Mum."

Although women are anxious to ensure that they maintain the household as would be expected and that they return to this role fully as soon as possible after night shifts end, night work may introduce some sense of freedom from expectations, particularly for women with older children. Indeed, in reflecting on the need to be there, this nurse indicates that she enjoys being at work because of the defined and finite nature of her role there:

> *"...I didn't get to bed til 10 instead of my usual say 9, then I might say set my alarm later and just leave a note for [son] 'cos he's got a key and just put 'I'm sleeping til half 4', you know, umm, but generally I get up [after night shift] Then I set my alarm for 4 and I'm awake, he comes in, I'm kind of coming to, and then I'm there and he comes in, gets a drink and goes on his x box anyway, so I might as well not be here, but yeah I try and get up as he comes home yeah.... I'm at work there's nothing else I can do, if I'm at work, that's it my role is defined I have to look after this patient, I can't study, I can't cycle, I can't cook, this is me, I've gotta look after this patient and it's actually a lot easier, because I can switch off and focus on what I'm doing and then I come home, and it's all there again, you know, so it's actually probably easier [at work].*
>
> *If I was single, I've actually said to [husband], if I didn't have him or [son] I'd probably work a lot lot more because you'd earn more money you'd have less time to do anything else, so you wouldn't have chance to spend it, and I just think when you're at work it's quite an abnormal kind of environment it's - you could begin to think that it was normal - because it's so - not easy that's the wrong word - it's so clearly defined what you do and you've got a role and you do it and it's difficult to explain but it's just not like being at home, and worrying about what you're not doing when you're at work there's only certain things that you can do and if you do them well you come away with a sense of achievement, you've earnt some money, and it's fantastic and you come home and [laughing] everything's still there yeah probably just as well, I've got them 'cos I'd be working 24 hours a day yeah"*
>
> (Nurse, 30s, Taylor family, Individual interview)

For this nurse, the "abnormality" of having a defined role at work is something which she values and which enables her to focus on the task by minimising worry about not meeting competing and continual expectations. Therefore, in contrast with the alternative of being subject to continual expectations at home, this nurse would prefer to work more, including night shifts. However, those very expectations at home, and the high regard which she places on meeting those expectations as fully as possible, together with the value she places on her relationships with her husband and son, prevent her from working according to a pattern which she might find more fulfilling personally.

This section suggests that nurses' perceptions of their night work and its effects are influenced strongly by the context of their wider work pattern and also by the weight of meeting high expectations (some elements of which may be self imposed as part of their identities as 'good' mothers and wives) about managing the household, childcare and household tasks. While some of the participating women are grateful for some of the positive aspects of night work, the general consensus is that night work and its negative effects for themselves and their families must be borne as part of their responsibilities as nurses.

7.5 CONCLUSIONS – NURSES' PERSPECTIVES ON THEIR NIGHT WORK

This chapter has discussed the influences of nurses' night work upon them and their families from nurses' own perspectives, nurses' wider perceptions of night work, and the work and home contexts in which participating nurses work at night.

The physical impacts of night work, including effects of reduced quality and quantity of sleep, and mood changes, are clearly very apparent for participating nurses, as many other studies suggest. These adverse influences are felt most keenly between night shifts, with their effects waning over the few days after night shifts end. However, anticipation of these changes and the demands of preparing their family and household for their absence can also create anxiety before the first night shift is worked. Nurses face competing demands as they plan household tasks and prepare themselves for night shifts, work the night shifts and try to sleep during the day while also meeting their families' immediate needs, and then while recovering physically after night shifts when they must resume usual daily household tasks

and catch up on those things which have not been completed during the period of night work in order to maintain their identity as "good" mothers and wives.

Although many husbands and children take on additional tasks during this period, it appears that this does not reduce the burden on nurses to any great extent, as they must manage this delegation while also dealing with the physical impacts of night work on themselves. Indeed, the ways in which participating nurses continue to fulfil expectations about "being there" for their families between and immediately before, during and after night shifts and when they might prefer to sleep during the day, suggest that nurses feel they should take on extra responsibilities to ensure that they moderate as far as possible any potential negative influences of night work upon their families.

Chapter 8 - Impacts of night work on the sleep and mood of nurses, their husbands and children

8.1 INTRODUCTION

This chapter draws on participants' log and mood scale data, analysis of nurses' saliva samples and themes emerging from the preceding analysis chapters concerning perspectives of children, husbands and nurses to discuss how night work affects the sleep and mood of these night working women and their families.

As Chapter 2 discusses, the effects of night work on employees' sleep, sleepiness and circadian rhythms are well documented (Akerstedt 2003; Dunlap, et al. 2004; Ohayon, et al. 2002)), but little is known about how this is experienced and understood by night workers, the effects of gendered expectations for women, and whether sleep and mood of family members are affected during periods of night work for employees.

This chapter presents patterns emerging from nurses' self-reported log and mood scale data and saliva data concerning the timing and duration of their sleep, self-rated mood and alertness/sleepiness and also insights into their levels of physiological stress through cortisol. This is discussed in relation to perspectives concerning lived experiences of night work for these partnered women with gendered responsibilities for their children's wellbeing and the organisation of family lives.

This chapter also draws together self-reported log and mood scale data from nurses' husbands and children and emergent themes concerning their lived experiences of night work to discuss how this pattern of work affects the sleep and mood of women's husbands and children.

Considering this self-reported data from daily written logs and mood scales and hormone levels from saliva data in the context of the same themes within family members' perspectives from qualitative interview and audio sleep diary data demonstrates the value of this study's mixed methods approach in enhancing insights gained from each set of data.

This approach enables understanding to be developed concerning effects on sleep and mood at particular stages of night work, while also providing insights into experiences and influences across and beyond each period of night work.

The chapter first discusses when sleep occurs during periods of night work, with a focus on the beginning and end of sleep. The duration of sleep is then considered, before self-rated sleep quality and alertness or sleepiness upon waking. Attention is then focused on self-rated mood, before discussing levels of the hormone cortisol in nurses' saliva samples and what this suggests about nurses' mood. As the previous chapter has most recently discussed nurses' perspectives on night work and because of the body of existing knowledge concerning impacts of night work on people working these shifts, the effects on nurses' sleep and mood are considered first in each section, before discussion of effects for husbands and children.

8.1.1 Summary of Methods

These data concerning the timing and duration of sleep refer only to the main sleep period. For husbands and children, this was always night time sleep. For nurses, these data refer to day time sleep following each night shift, and night time sleep at other times. Some of the nurses and husbands provided information about occasional napping outside the main sleep period. This information has not been included because the focus is on the characteristics of the main period of sleep. These naps were rare, involved only a small number of people for short periods of sleep and there was sometimes uncertainty about whether this was sleep or lying down restfully. Additionally, no information is available about sleep quality and alertness/sleepiness after these naps.

Due to the focus on influences of nurses' night work for nurses themselves and their husbands and children, data is only included for nights when husbands and children were in the family home and when nurses were either at home or at work on night shifts. Data for nights spent away from the family home by husbands and children and any nights spent away from the family home by nurses when not on night shifts have been excluded from the analysis.

Throughout this chapter, discussion about the impacts of night work on sleep and mood focuses around comparisons between nights when nurses are away from home on night shifts and nights when they are at home. For the nights when they are at home, nurses may be working early, late or long day shifts or other short shifts or they may have time off.

Mean values were calculated for each group of family members (nurses, husbands, teenage children, pre-teenage children) during periods of night work and for the other days during the 14 day study period. A test of the significance of differences between these mean values (One way ANOVA) was conducted. Each nurse completed between two and five night shifts during the study period. Thus, the mean values reflect approximately 60 nights in the night work condition for nurses and for husbands (20 families with an average of 3 night shifts per family) and 220 nights in the 'no night work' condition for nurses and for husbands. The mean values for teenage children (n=19) and pre-teenage children (n=15), reflect fewer nights because there were fewer participants in each group of family members. Analysis was conducted separately on the diary data of teenage and pre-teenage children because of likely differences in sleep timing and sleep duration based on children's ages.

Given the identification of the preparation, during and recovery stages of night work within husbands' and nurses' accounts (see 6.4.1 and 7.3.2, 7.3.3 and 7.3.4), the chapter also includes results of comparison between nights before, during and after night shifts. This involved calculating mean values for each family member using a five category variable which divides the study period into nights when the nurse was (1) not working at night, (2) the night before the nurse's night work commenced, (3) the first night shift, (4) the last or only night shift, and (5) the first night after night shifts end. Values for any middle night shifts were excluded because this only applied to a small number of families. A test of the significance of differences between these mean values (Repeated measures ANOVA with Tukey post-hoc tests) was conducted.

8.2 IMPACTS OF NIGHT WORK ON SLEEP TIMING

Working at night necessitates remaining awake during the usual period of night time sleep and usually involves sleeping during the day time after the night shift. This section discusses changes in the timing of sleep following night shifts for women working as nurses, and also how the timing of their husbands' and children's sleep is affected. This includes

consideration of self-reported times for going to bed, trying to sleep, waking up and getting up.

Each evening during the two week study period, participants were asked to record in their two week participant booklet the times at which they went to bed and started trying to sleep. Bedtime refers to the time when they prepared for bed, whereas trying to sleep time refers to the time when they tried to start sleeping (perhaps marked by turning off the light and stopping reading, talking, watching television or listening to the radio). Each morning, participants were asked to provide an estimate of the amount of time it took them to fall asleep the previous night (sleep latency) and to record the times at which they woke up and got up. During periods of night work, nurses were asked to record bedtime and trying to sleep time before going to sleep in the morning, and then to provide wake up and get up times and an estimate of sleep latency after waking following their period of day time sleep. (See p.6 in Appendices 4.5, 4.6, 4.7 and 4.8)

Tables 8.1, 8.2, 8.3 and 8.4 show mean timings for bedtime, trying to sleep, waking and getting up for nurses, husbands, teenage and pre-teenage children during night work and for other nights during the study period.

8.2.1 Timing of nurses' sleep

As would be expected given the timing of their night shifts, nurses' sleep is significantly delayed followed their night shifts when compared with other nights. Tables 8.1 and 8.2 show that bedtime and trying to sleep time are delayed by approximately ten hours on average to 09:14 ± 0:56 for bedtime and 09:23 ± 1:02 for trying to sleep time. Given that all of the nurses in this study are scheduled to finish their night shifts between 07:00 and 08:00 and none has a commuting time of more than 30 minutes, this suggests that time is spent on activities between returning from work and preparing to sleep. These data concerning day time sleep support the accounts of nurses which indicate that despite their tiredness following a night shift and over 24 hours since their last main sleep period, most of the nurses in this study meet gendered expectations of them before sleeping by delivering children to school and undertaking other tasks such as cleaning and washing (see 7.3.3).

The amount of time which nurses estimated elapsed before they were asleep (sleep latency) is significantly (p=0.010) shorter for day time sleep following night shifts compared with night time sleep at other times. The mean sleep latency is 17 minutes (± 9 minutes) for night time sleep and 10 minutes (± 10 minutes) for day time sleep following night shifts. While the large standard deviation suggests the actual length of sleep latency may vary between individual nurses and days, the significantly shorter sleep latency following night shifts supports nurses' accounts about the tiredness and urgent need for sleep which they feel following night shifts (see 7.3.3).

Tables 8.3 and 8.4 show that nurses' waking and get up times are also significantly delayed following night shifts, occurring approximately 7 hours and 25 minutes later than during periods of night time sleep. However, it is notable that nurses' getting up and waking up times are delayed by approximately two and a half hours less than for bedtimes and trying to sleep times. This is discussed further in section 8.3 concerning changes in sleep duration.

Following the insights emerging from participants' accounts concerning the effects of night work both before and after night shifts (see 6.4.1 and 7.3.2, 7.3.3 and 7.3.4), analysis was conducted to establish whether sleep timing differs between times when the nurse is not working at night, the night before night work commences, the first night shift, the last or only night shift and the first night after night shifts end. This analysis revealed several important differences in sleep timing for nurses within the period of night work. Table 8.5 below shows the mean values for each category of night work and the significant differences revealed by the Tukey post-hoc test.

As would be expected given the timing of night shifts, nurses' bed time and trying to sleep time are delayed by approximately ten hours when compared with times when there are no night shifts and the night immediately before night shifts and these are statistically significant differences. Bedtimes and trying to sleep times are also significantly later following first and last night shifts when compared with the first night after night shifts. The mean trying to sleep time on the first night after night shifts (midnight) is also delayed by approximately one hour when compared with periods without night work and the night before night shifts begin, although these differences are not significant. This delay of an hour between bedtime and trying to sleep time immediately following night shifts supports the accounts of some nurses about their anxiety and difficulties in sleeping at night following their night shifts (see 7.3.4).

Table 8.5 shows that mean wake up and get up times for nurses are similar for periods without night work and for the first night after night shifts end. However, mean wake up time is 07:41 ± 1:04 for the morning before night shifts commence, which is around 40-45 minutes later than for periods without night work and the first night after night shifts end. Mean get up time is 08:12 ± 1:14 for the morning before night shifts commence, which is 45-55 minutes later than for periods without night work and the first night after night shifts end. However, these differences are not statistically significant. This supports nurses' accounts in 7.3.2 about the need for additional sleep before night shifts commence and the difficulties of obtaining this sleep given the importance of ensuring the household and children are prepared prior to the nurse's absence on night shifts. These data suggest that some nurses may be able to sleep later on the night before night shifts: perhaps this includes nurses with older children.

Mean wake up and get up times for nurses following day time sleep after the first night shift are 14:58 ± 1:41 and 15:22 ± 1:28 respectively. Following the last or only night shift, mean wake up time is 13:28 ± 0:48 and mean get up time is 13:46 ± 0:55. Both of these timings support nurses' accounts about the need to get up in time either to collect children from school, or to be up and available to older children when they return (see 7.3.3). As would be expected, all of these times are significantly different from periods without night work (including no nights, the morning immediately before night work commences and the first night after night shifts end), but the differences in times are significantly different between the first and last or only night shifts also. Waking up on average 1 hour and 20 minutes earlier and getting up on average 1 hour and 36 minutes earlier following a last or only night shift when compared with a first night shift also suggests that nurses may feel greater urgency to get up rather than spending time resting in bed before getting up at the end of a period of night shifts. These sleep diary data demonstrating nurses' earlier times for waking up and getting up at the end of a period of night shifts reflect nurses' accounts concerning difficulties sleeping the following night but also the sense of expectation which nurses feel to commence the recovery from night work as soon as possible so that usual patterns and responsibilities are resumed. This is also considered in relation to sleep duration in 8.3.

Mean bedtime, trying to sleep time, wake time and getting up time were also later for husbands and teenage children during nurses' night shifts when compared with nights when the nurse is at home. Mean bedtime and trying to sleep time were also later for pre-teenage children. This delay in sleep timing for the husbands and children of women night workers is

an important finding which other research has not covered, and this finding supports the accounts of nurses' husbands and children concerning freedom and relaxed evenings and later sleep times in their wife or mother's absence on night shifts (see 5.2.7, 5.3.2, 6.3.3 and 6.3.4). Sections 8.2.2 and 8.2.3 now consider separately the timing of husbands' and children's sleep.

8.2.2 Timing of husbands' sleep

For husbands, bed time is delayed by an average of 20 minutes and trying to sleep time is delayed by an average of 24 minutes, while wake time is delayed by an average of 11 minutes and getting up time was delayed by an average of 16 minutes. The greater delay in bed time and trying to sleep time reflects husbands' accounts concerning their freedom to structure evenings and going to sleep in their wife's absence. Additionally, it reflects the limits on delaying waking up and getting up because of the need to prepare for the day and to ensure that they and their children are at work and school or college on time. The slight delay in waking and getting up times for husbands in their wives' absence also supports husbands' accounts in Chapter 6 by indicating that the often very busy early morning period when husbands take responsibility for ensuring everything is prepared before their wives' return from the night shift (6.3.1) may be made more pressured due to a reduction in time available by delaying getting up.

However, none of these changes to husbands' sleep timing is statistically significant. This may be partly an artefact of the sample size which is relatively small and was designed within the study's qualitative focus. The mean sleep timing values for each participating husband indicate that the sleeping time of husbands in some families is delayed when their partner is at work at night, while in other families husbands' sleep timing is similar to or slightly earlier than their usual sleep timing. This suggests that while many husbands may experience more freedom during periods of night work and may exercise this with later sleep, not all husbands may respond in the same way to their wife's absence on night shifts. This reflects the qualitative accounts of husbands, which indicate that not all the participating husbands delay their sleep in the same way (see 6.3.4). As the standard deviation figures suggest, some husbands may delay their sleep by rather longer than the mean figures indicated in the tables below, while some husbands may delay their sleep by just a few minutes. Other husbands, perhaps due to the number of additional tasks for completion in their wives' absence (see 6.3.1), may go to sleep and get up earlier to ensure they are

prepared for the busy morning period before their wives' return from their night shift (see 6.3.4).

8.2.3 Timing of children's sleep

For teenage children, bed time is delayed by an average of 27 minutes and trying to sleep time is delayed by an average of 29 minutes, while both wake time and getting up time are delayed by an average of 6 minutes. However, as for nurses' husbands, none of these delays to sleep timing are statistically significant (see Tables 8.1, 8.2, 8.3 and 8.4). These delays to teenage children's sleep timing also support children's accounts about later bedtimes and sleep times and slightly later waking up and getting up times in their mothers' absence at work (see 5.2.7.1 and 5.2.7.2). The standard deviation of over an hour and the lack of significant difference suggest that while some teenage children go to bed and to sleep very much later in their mothers' absence on night shifts, others' sleep is not delayed to the same extent. The range of bedtimes and trying to sleep times (mean bedtimes for individual teenagers vary from 20:42 to 01:25) among participating teenage children may have also affected the lack of significant difference in sleep timing.

For pre-teenage children, bed time is delayed by an average of 18 minutes and this is statistically significant ($p=0.009$). Nine of the fifteen pre-teenage children have a delayed bed time during periods of their mothers' night work, with a delay of up to 50 minutes compared with bed times at other times. For pre-teenage children, trying to sleep time is also delayed by 10 minutes while waking time and getting up time are earlier by 4 and 1 minutes respectively, but these small changes are not statistically significant. This again supports the accounts of children regarding relaxed implementation of usual expectations about bedtime in their fathers' care (see 5.2.7.1 and 5.2.3). However, it suggests that these changes may vary according to the age of the children. While fathers may allow pre-teenage children to stay up later than mothers might permit, it seems that the time at which pre-teenage children try to sleep is not much later. This may reflect age-based differences in expectations about parents marking the start of trying to sleep time by ensuring lights and other equipment are switched off (see 6.3.1). It may also reflect fathers' sense of responsibility to protect their wives from additional burdens during the period of night work (see 6.3.2): fathers may seek to alleviate the effects of a later bedtime by ensuring younger children go to sleep at a similar time to usual so that they are not tired the following day

through reduced sleep. Alternatively, it may reflect children feeling sufficiently tired to sleep at a particular time, particularly without their usual relaxation period in bed before sleeping.

Analysis using the five categories of nights (no night work, night before night work commences, first night shift, last or only night shift, night after night shifts end) revealed no clear patterns and no significant differences using Tukey post-hoc tests for the timing of husbands' and children's sleep. The lack of clear differences in sleep timing for husbands and children within periods of night work supports qualitative accounts which suggest that the great majority of preparatory and recovery work for night work is completed by nurses (see 5.2.1, 6.4.5, 7.3.2, 7.3.4, 7.4.3). Children's and husbands' accounts suggest that delays in sleep timing emanate primarily from the increased sense of freedom in their mother or wife's absence on night work rather than from responsibilities which nurses' accounts suggest influence their sleep timing during periods of night work.

Table 8.1 – Bedtime for nurses, husbands and children during night work and other times

	N=	Not night work	Night work	Difference	P=
Nurses	20	***23:06 ± 0:40***	***09:14 ± 0:56***	***10 hours 6 minutes later***	***<0.001***
Husbands	19	23:19 ± 0:44	23:39 ± 0:51	20 minutes later	0.115
Teenage children	19	22:40 ± 1:11	23:07 ± 1:28	27 minutes later	0.101
Pre-teenage children	15	***21:10 ± 0:43***	***21:28 ± 0:50***	***18 minutes later***	***0.009***

Table 8.2 – Trying to sleep time for nurses, husbands and children during night work and other times

	N=	Not night work	Night work	Difference	P=
Nurses	20	***23:28 ± 0:40***	***09:23 ± 1:02***	***9 hours 55 minutes later***	***<0.001***
Husbands	19	23:35 ± 0:45	23:59 ± 0:53	24 minutes later	0.070
Teenage children	19	22:57 ± 1:10	23:26 ± 1:25	29 minutes later	0.077
Pre-teenage children	15	21:28 ± 0:40	21:38 ± 0:50	10 minutes later	0.149

Table 8.3 - Wake time for nurses, husbands and children during night work and other times

	N=	Not night work	Night work	Difference	P=
Nurses	20	***07:04 ± 0:32***	***14:29 ± 1:01***	***7 hours 25 minutes later***	***<0.001***
Husbands	19	06:52 ± 0:56	07:03 ± 0:50	11 minutes later	0.444
Teenage children	19	07:46 ± 0:46	07:52 ± 1:05	6 minutes later	0.653
Pre-teenage children	15	07:14 ± 0:34	07:10 ± 1:14	4 minutes earlier	0.833

Table 8.4 - Get up time for nurses, husbands and children during night work and other times

	N=	Not night work	Night work	Difference	P=
Nurses	20	***07:27 ± 0:35***	***14:50 ± 1:02***	***7 hours 23 minutes later***	***<0.001***
Husbands	19	07:10 ± 0:55	07:26 ± 0:53	16 minutes later	0.267
Teenage children	19	07:59 ± 0:46	08:05 ± 1:06	6 minutes later	0.695
Pre-teenage children	15	07:29 ± 0:20	07:28 ± 1:16	1 minute earlier	0.985

Table 8.5 – Nurses' sleep timing following first night shifts, last or only night shifts, on the night before night work, the night after night work and on other nights

	N	No nights	Before nights	First night	Last or only night	After nights
Bedtime	16	23:00 ± 0:44	23:00 ± 0:53	09:06 ± 0:35 *a,b,d*	09:06 ± 0:38 *a,b,d*	23:00 ± 1:30
Trying to sleep time	16	23:00 ± 0:43	23:00 ± 0:58	09:12 ± 0:43 *a,b,d*	09.18 ± 0:40 *a,b,d*	00:00 ± 1:24
Wake up time	16	06:57 ± 0:32	07:41 ± 1:04	14:58 ± 1:41 *a,b,c,d*	13:28 ± 0:48 *a,b,d*	06:52 ± 1:08
Get up time	16	07:17 ± 0:31	08:12 ± 1:14	15:22 ± 1:28 *a,b,c,d*	13:46 ± 0:55 *a,b,d*	07:28 ± 1:13

a = significant difference (p<0.050) compared with "No nights"
b = significant difference (p<0.050) compared with "Before nights"
c = significant difference (p<0.050) compared with "Last or only night"
d = significant difference (p<0.050) compared with "After nights"

This section has indicated that as expected, nurses' sleep timing is significantly delayed following periods of night work compared with night time sleep. In addition, this section supports qualitative accounts in providing new insights into experiences of night work for these partnered women with children. These sleep diary data indicate that nurses' get up and wake up times are significantly earlier following last or only night shifts in comparison with first night shifts, reflecting the weight of gendered expectations to resume usual patterns and responsibilities as soon as possible after night work ends.

These sleep diary data also support husbands' and children's accounts concerning later sleep following evenings without usual expectations in the nurse's absence on night shifts. For pre-teenage children, bed time is significantly delayed by 18 minutes, while trying to sleep time is delayed but this is not statistically significant.

Further analysis is now presented concerning the ways in which sleep timing affects sleep duration for nurses, their husbands and children during periods of night work.

8.3 IMPACTS OF NIGHT WORK ON SLEEP DURATION

Many previous studies have revealed that night shift workers often experience significantly reduced sleep duration during periods of day sleep following night shifts when compared with night time sleep (for example, see Barton, et al. 1995a). Reduced sleep duration may have impacts on levels of sleepiness or alertness and also on individuals' mood. Although sleep duration may increase with successive night shifts as the body's circadian system and sleep pattern adapt to day time sleep (Barton, et al. 1995a), this is likely to happen only when four or more night shifts are worked consecutively (in this study, all but two nurses worked only two or three nights consecutively). In common with other areas of knowledge about shift workers' families, little is known about sleep duration for family members of people working at night.

Therefore, as with sleep timing in section 8.2, this section considers mean sleep duration for each family member during periods of night work and at other times, and also compares sleep duration for the five different categories of nights. Sleep duration was calculated using self-reported trying to sleep time, sleep latency, awakenings and wake time from participants' sleep logs in their two week participant booklets.

Table 8.6 below shows mean sleep duration for nurses, husbands, teenage children and pre-teenage children during periods of night work and at other times.

8.3.1 Nurses' sleep duration

Sleep duration is significantly shorter for nurses during periods of night work compared to other times. The reduction is two hours and 20 minutes, from mean sleep duration of seven hours and six minutes when not working night shifts to four hours and 46 minutes for day sleep following night shifts. This supports qualitative accounts of nurses which suggest that alongside difficulties for some nurses in achieving sleep during the day time (as acknowledged in the physiological literature), opportunities for sleep are limited by gendered expectations about delivering and collecting children from school and other household and childcare responsibilities.

Table 8.7 below shows nurses' mean sleep duration for night time sleep without night shifts, the night before night work commences, day sleep following the first night shift, day sleep following the last or only night shift and night sleep after night work ends. Tukey post-hoc tests reveal that nurses' sleep duration is significantly shorter following both first and last night shifts when compared with nights not adjacent to night work, nights before night work starts and nights after night work ends.

Mean sleep duration for nurses following the first night shift (5 hours 17 minutes ± 1 hour 36 minutes) is significantly longer than mean sleep duration following a last or only night shift (3 hours 58 minutes ± 46 minutes) by one hour and 19 minutes. This again supports qualitative accounts of nurses which indicate that alongside concerns about not being able to sleep on the night after night shifts finish, nurses feel gendered expectations to re-establish usual patterns of completing household tasks and childcare responsibilities as soon as possible after night work ends and may feel guilty about sleeping during the day (see 7.3.3).

Mean sleep duration for nurses on the night before night work commences is almost an hour longer (7 hours 55 minutes ± 1 hour 7 minutes) compared with nights without night work (6 hours 59 minutes ± 47 minutes) but this difference is not statistically significant. As with the delayed wake up and get up times for nurses discussed in 8.2 above, this suggests that only

nurses with older children are able to slightly extend their sleep during the morning before night work commences.

8.3.2 Husbands' and children's sleep duration

Table 8.6 below also shows that mean sleep duration is shorter for husbands (by 8 minutes), for teenage children (by 20 minutes) and for pre-teenage children (by 12 minutes). These differences are not statistically significant.

Taken together with the sleep timing data discussed in 8.2, these sleep duration data suggest that the very slight delay in waking up and getting up times during periods of night work partly alleviate the effects on sleep duration of later bed times and sleep times. However, it appears that some teenage children have reduced sleep duration when their mother is on night shifts because teenage children have the greatest delay in mean bed times and sleep times (see Tables 8.1 and 8.2) above and yet mean waking up and getting up times are only very slightly delayed (see Tables 8.3 and 8.4). The lack of significance in this reduced sleep duration may reflect the small sample size and the very different timing of bed times among the group of teenage children (mean 20:42-01:25).

Table 8.6 - Sleep duration for nurses, husbands and children during night work and other times

	N	Not night work	Night work	Difference	P
Nurses	20	***7:06 ± 0:45***	***4:46 ± 1:26***	***2 hours 20 minutes shorter***	***<0.001***
Husbands	19	6:53 ± 0:49	6:45 ± 0:53	8 minutes shorter	0.500
Teenage children	18	8:27 ± 0:59	8:07 ± 1:32	20 minutes shorter	0.167
Pre-teenage children	15	9:19 ± 0:57	9:07 ± 1:22	12 minutes shorter	0.540

Table 8.7 – Sleep duration for nurses following first night shifts, last or only night shifts, on the night before night work, the night after night work and other nights

	N	*No nights*	*Before nights*	*First night*	*Last or only night*	*After nights*
Sleep duration	***16***	***6:59 ± 0:47***	***7:55 ± 1:07***	***5:17 ± 1:36*** *a,b,c,d*	***3:58 ± 0:46*** *a,b,d*	***6:28 ± 1:17***

a = significant difference ($p<0.050$) compared with "No nights"
b = significant difference ($p<0.050$) compared with "Before nights"
c = significant difference ($p<0.050$) compared with "Last or only night"
d = significant difference ($p<0.050$) compared with "After nights"

This section has presented sleep duration data drawn from self-reported sleep timing in written sleep logs within two week participant booklets. These data indicate that nurses' main sleep period duration is significantly shorter following night shifts than for night time sleep at other times. Further analysis concerning sleep duration at different stages of a period of night work indicate that sleep duration is significantly shorter for nurses following a last or only night shift when compared with sleep following a first night shift. This supports nurses' accounts about their concern to assume usual responsibilities and to resume usual patterns within the household as soon as possible after their last night shift due to guilt about sleeping during the day.

These data also indicate that sleep duration is significantly shorter during periods of night work for nurses' husbands and children when compared with other night shifts but these differences are not statistically significant.

Having considered the timing and duration of sleep during periods of night work and at other times, the next section focuses on how participants rate their sleep quality and alertness/sleepiness following sleep.

8.4 IMPACTS OF NIGHT WORK ON SLEEP QUALITY AND ALERTNESS/SLEEPINESS UPON WAKING

Physiological literature concerning night work indicates that sleep quality and alertness levels are often reduced for night workers for sleep following their night shifts (see Barton, et al. 1995a). However, very little is known about the sleep quality and alertness or sleepiness of night workers' partners and children.

This section discusses self-rated sleep quality and levels of alertness or sleepiness upon waking for nurses and also for their husbands and children. These data enable consideration of further dimensions of sleep which may change during periods of night work than can be explored through sleep timing and duration.

Each morning after waking, each family member completed two scales in their two week participant booklet (see p.5 in Appendices 4.5, 4.6, 4.7 and 4.8). During periods of night work, nurses completed these scales after their main day sleep period. The first scale was a four point sleep quality rating scale from the Pittsburgh Sleep Quality Index (see Buysse et al, 1989) which included the options of "very good", "fairly good", "fairly bad" and "very bad" (numbered 1-4 for analysis – see key below Table 8.8) The second scale was a nine point alertness/sleepiness scale from the Karolinska Sleepiness Scale (Akerstedt and Gillberg 1990) with options ranging from "Very alert – 1" through "Neither alert nor sleepy – 5" to "Very sleepy – great effort to stay awake – 9". For clarity for pre-teenage children, "alert" was replaced with "wide awake" whenever it appeared on the alertness/sleepiness scale.

As with sleep timing and sleep duration, mean scores on the scales were calculated for nurses, husbands, teenage children and pre-teenage children during night work and at other times.

Tables 8.8 and 8.9 show mean values on both these scales during periods of night work and at other times for nurses, husbands, teenage and pre-teenage children.

8.4.1 Nurses' sleep quality and alertness/sleepiness

For nurses, as would be expected from physiological literature concerning poor sleep quality and resulting sleepiness during periods of night work, both mean sleep quality and mean alertness scores are reduced after day time sleep during periods of night work when compared with night time sleep at other times.

However, the reduction in nurses' self-rated sleep quality is only 0.23 on a 4 point scale and this difference is not statistically significant. The standard deviation of 0.89 suggests that some nurses may report a greater reduction in their sleep quality during night work. Only having four points on this scale may also limit these findings, particularly because their sleep may be of relatively poor quality when they are not working night shifts due to their early and late shifts, their responsibilities at work and at home (see 7.2). Perhaps this perception of the "depth" of some day sleep and nurses' feeling of relief at finally having an opportunity to sleep (see 7.3.3) contributes to their sleep quality ratings. Additionally, the four points on this scale and their labels which allow no rating between "fairly good" and "fairly bad" may not allow for more subtle variations in the quality of sleep.

Nurses' self-rated alertness is significantly reduced by 1.45 points from 4.30 ± 1.35 (0.70 points more alert than "Neither alert nor sleepy") following night time sleep to 5.75 ± 1.91 (0.75 points more sleepy than "Neither alert nor sleepy") following day time sleep after night work. This may reflect the reduced sleep duration for nurses compared with night time sleep and getting up in time to collect children from school and fulfil other expectations about household tasks and childcare in the late afternoon.

8.4.2 Husbands' and children's sleep quality and alertness/sleepiness

Mean self-rated sleep quality and alertness were slightly reduced for husbands and pre-teenage children for sleep during periods of nurses' night work when compared with other times. For teenage children, self-rated sleep quality and alertness were slightly increased for sleep during periods of their mothers' night work when compared with other times. However, none of the changes in husbands' and children's sleep quality and alertness were statistically significantly different (see Tables 8.8 and 8.9). This suggests that while there may be small delays in the timing of sleep and slight reductions in sleep duration for

husbands and children when their wives and mothers are working night shifts, there are no important effects on the quality of husbands' and children's sleep or how alert they feel the following morning during periods of nurses' night work. This supports qualitative accounts which suggest that the majority of impacts of night work are borne by nurses due to their working pattern and gendered expectations of them.

Table 8.8 Self-rated sleep quality for nurses, husbands and children during night work and other times

	N=	Not night work	Night work	Difference	P=
Nurses	19	1.95 ± 0.28	2.18 ± 0.89	0.23 worse	0.174
Husbands	19	1.86 ± 0.36	1.96 ± 0.61	0.10 worse	0.473
Teenage Children	19	2.07 ± 0.27	1.88 ± 0.54	0.19 better	0.090
Pre-teenage Children	15	1.63 ± 0.40	1.76 ± 0.44	0.13 worse	0.405

1 = Very good; 2 = Fairly good, 3 = Fairly bad; 4 = Very bad

Table 8.9 Self-rated alertness/sleepiness for nurses, husbands and children during night work and other times

	N=	Not night work	Night work	Difference	P=
Nurses	***20***	***4.30 ± 1.35***	***5.75 ± 1.91***	***1.45 worse***	***0.005***
Husbands	19	4.29 ± 1.28	4.59 ± 1.65	0.30 worse	0.473
Teenage Children	19	4.89 ± 1.15	4.80 ± 1.76	0.09 better	0.765
Pre-teenage Children	15	3.79 ± 1.37	4.06 ± 1.68	0.27 worse	0.533

1 = Very alert; 3 = Alert – normal level; 5 = Neither alert nor sleepy; 7 = Sleepy, but little effort to keep awake; 9 = Very sleepy, great effort to keep awake. Even values are intermediate between these labels.

During periods of night work, self-reported sleep quality and alertness are reduced for nurses, husbands and pre-teenage children when compared with night sleep at other times. Self-reported sleep quality and alertness are increased for teenage children during periods of their mothers' night work. However, of all these changes, only nurses' alertness is statistically significantly reduced. The next section considers self-rated mood scores.

8.5 IMPACTS OF NIGHT WORK ON MOOD

Within physiological literature, there are indications that disruption to usual sleep patterns and the circadian system during night work may have effects on night workers' mood. However, little is known about the mood of night working women who also have childcare and household responsibilities. Additionally, little is known about whether the mood of their partners and children is affected during periods of night work.

Each evening before sleeping, each participating family member completed four subjective mood scales in their two week participant booklet, each with a nine point rating range (see p.8 in Appendices 4.5, 4.6, 4.7 and 4.8). In completing these scales, participants were asked to reflect on their mood throughout the day. During periods of night work, nurses completed these scales before day sleep and were asked to reflect on their mood since their last main period of sleep. The mood scales represented "Very cheerful" to "Very miserable" (Mood Scale 1), "Very calm" to "Very tense" (Mood Scale 2), "Very depressed" to Very elated" (Mood Scale 3) and "Very alert" to "Very sleepy" (Mood Scale 4). For pre-teenage children, age-appropriate words were used in Mood Scales 2, 3 and 4: for Mood Scale 2 this was "Very calm" to "Very worried", for Mood Scale 3 "Very sad" to "Very happy" and for Mood Scale 4 "Very wide awake" to "Very sleepy." For each mood scale (regardless of direction), a higher score indicates worse mood.

As with the parameters for sleep, mean scores on each of the four subjective mood scales were calculated for nurses, husbands, teenage children and pre-teenage children. These values are shown in Tables 8.10, 8.11, 8.12 and 8.13 below.

8.5.1 Nurses' mood scores

For nurses, as expected from the physiological literature, scores on all four scales indicated worse mood. This included a significant reduction of 0.66 on the Cheerful-miserable scale, a reduction of 0.31 on the Calm-tense scale which is not statistically significant, a significant reduction of 0.40 on the Elated-depressed scale and a significant reduction of 0.97 on the Alert-sleepy scale. This supports qualitative accounts from nurses which indicate feeling generally less positive and less patient during periods of night work; and also feeling much more tired as a result of changed sleep patterns (see 7.3.3). The lack of statistical

significance on the Calm-tense scale may reflect the completion time after night shifts and before day sleep time. Although nurses were asked to ensure their mood scale completion reflected their mood over the whole period since their last main sleep period, these scores may also partly reflect relief at the imminent opportunity for sleep (see 7.3.3).

8.5.2 Husbands' mood scores

Tables 8.10, 8.11, 8.12 and 8.13 below show very slightly worse mood for husbands on the Cheerful-miserable and Alert-sleepy scale, very slightly better mood on the Calm-tense scale and better mood on the Elated-depressed scale. However, all apart from the Elated-depressed scale show very slight changes in mean scores and none of the four scales show statistically significant differences between periods of night work and other times. This suggests that the increased responsibilities and freedom experienced by husbands during their wives' night work may balance each other, resulting in no clear trends in mood overall. This in turn suggests that any effects on couple relationships as a result of mood changes during periods of night work occur due to changes in nurses' mood only, rather than changes in husbands' mood.

However, these scores for the whole day may mask changes in mood at particular points during the day. Husbands' accounts suggest that evenings may be relaxed and enjoyable and may involve spending time with their children before later bedtimes, and may be in contrast with more stressful early mornings when husbands ensure arrangements are in place for school and work before their wives' return from night shifts (see 6.3.1 and 6.3.3).

8.5.3 Children's mood scores

For pre-teenage children, mood scale scores for Cheerful-miserable, Calm-tense and Elated-depressed all show worse mood during periods of night work than at other times. However, these are small changes which are not statistically significant (see Tables 8.10, 8.11 and 8.12 below). Table 8.13 shows a very slight (0.01) improvement in mean mood score for the Alert-sleepy scale and this is not statistically significant.

For teenage children, mood scales for Cheerful-miserable and Alert-sleepy show worse mean scores by a small margin during periods of night work compared with other times (see

Tables 8.10 and 8.13). However, teenage children's mood scales for Elated-depressed show improved mood by 0.34 which is not statistically significant, while their scores on Calm-tense show improved mood by 0.53 which is a statistically significant difference (see Tables 8.11 and 8.12).

These data suggest that children of different ages may differently experience their mothers' night shifts. While the accounts of children of all ages suggest that going to bed and going to sleep later are common themes during their mothers' absence from home during night shifts, it seems that her absence and her working night shifts may be differently experienced by pre-teenage and teenage children.

Within qualitative accounts, it appears that the majority of accounts about night work being "boring" (5.3.3) were from younger children and it also appears that some younger children may be more likely to feel concerned or scared about their mothers' absence (5.3.2). However, these negative sentiments were expressed by a small number of the pre-teenage children, and it appears this is reflected in the slight worsening of pre-teenage children's mood without statistical significance during periods of night work.

Although many of the teenage children indicated in their qualitative accounts that they are consciously aware of their mothers' absence on night shifts, within these accounts were feelings of apparent relief in the absence of their mothers' usual expectations about completing certain tasks and the structure of their evenings (5.3.2). These sentiments appear to be expressed in the significantly less tense and more calm scores on the Tense-calm mood scale (see Table 8.12).

These differences in mood scale scores between pre-teenage and teenage children support children's qualitative accounts and further their analysis by drawing attention to the different feelings expressed by children of different ages.

Table 8.10: Evening mood scale scores (Cheerful-miserable) for nurses, husbands and children during night work and at other times

	N	Not night work	Night work	Difference	P
Nurses	***20***	***3.93 ± 0.87***	***4.59 ± 1.11***	***0.66 worse***	***0.006***
Husbands	19	3.99 ± 1.05	4.04 ± 1.14	0.05 worse	0.864
Teenage children	17	3.85 ± 0.99	3.55 ± 1.22	0.30 worse	0.280
Pre-teenage children	15	3.41 ± 1.35	3.47 ± 1.29	0.06 worse	0.847

Table 8.11: Evening mood scale scores (Calm-Tense) for nurses, husbands and children during night work and at other times

	N	Not night work	Night work	Difference	P
Nurses	20	3.93 ± 0.98	4.24 ± 1.32	0.31 worse	0.148
Husbands	19	4.04 ± 1.14	4.03 ± 1.34	0.01 better	0.951
Teenage children	***19***	***3.60 ± 0.99***	***3.07 ± 1.38***	***0.53 better***	***0.042***
Pre-teenage children	15	3.27 ± 1.03	3.46 ± 1.25	0.19 worse	0.334

Table 8.12: Evening mood scale scores (Depressed-elated) for nurses, husbands and children during night work and at other times

	N	Not night work	Night work	Difference	P
Nurses	***19***	***4.32 ± 0.63***	***4.72 ± 0.92***	***0.40 worse***	***0.012***
Husbands	19	4.33 ± 0.79	3.78 ± 1.08	0.55 better	0.467
Teenage children	18	3.78 ± 1.08	3.44 ± 1.13	0.34 better	0.180
Pre-teenage children	15	3.67 ± 0.95	1.13 ± 3.77	0.10 worse	0.721

Table 8.13: Evening mood scale scores (Alert-Sleepy) for nurses, husbands and children during night work and at other times

	N	Not night work	Night work	Difference	P
Nurses	***20***	***4.70 ± 0.93***	***5.67 ± 1.70***	***0.97 worse***	***0.008***
Husbands	19	4.93 ± 1.44	5.04 ± 1.44	0.09 worse	0.677
Teenage children	18	4.94 ± 1.34	5.00 ± 1.67	0.06 worse	0.827
Pre-teenage children	15	4.44 ± 1.62	4.43 ± 1.85	0.01 better	0.965

Analysis of data from four mood scales completed by nurses, husbands and children before each night's sleep (before day sleep for nurses during periods of night work) provide important insights which both support and further understanding of nurses', husbands' and children's qualitative accounts.

Nurses' scores worsened during periods of night work on all four mood scales and these changes were statistically significant for Cheerful-miserable, Depressed-elated and Alert-sleepy mood scales. As expected based on physiological literature, this demonstrates the impacts of night work and fulfilment of gendered expectations about household and childcare responsibilities on nurses.

Husbands' and pre-teenage children's scores showed only small changes during night work which were not statistically significant. Some changes were improved mood and some were worsened mood. This suggests that there are no clear trends in mood for husbands and pre-teenage children during periods of night work for their wives and mothers.

Teenage children's scores show slightly worse scores on Cheerful-miserable and Alert-sleepy and improved mood on Depressed-elated but none of these changes were statistically significant. However, the Tense-calm mood scale showed a statistically significant improvement in mood for teenage children during periods of night work compared with other times. This supports qualitative accounts in suggesting that for teenage children in particular, increased independence and reduced expectations about completion of tasks and timing of sleep in their mothers' absence on night shifts may promote greater calmness.

The next section focuses on nurses' salivary cortisol levels and what this suggests about changes in physiological stress during periods of night work.

8.6 IMPACTS OF NIGHT WORK ON NURSES' SALIVARY CORTISOL

Working at night and sleeping the following day has important impacts on the body's circadian system. Previous research has revealed that this includes changes to the secretion levels of certain hormones, including cortisol (see Hennig et al, 1998; Kudielka et al, in press). Cortisol is known as a 'stress' hormone with a diurnal circadian rhythm whose secretion nadir is in the early morning (Kirschbaum and Hellhammer 1989). Salivary cortisol data for nurses are presented here to give an indication of levels of nurses' physiological stress at different stages of night work.

To enable measurement of cortisol during periods of night work, nurses in this study were asked to provide saliva samples in the morning after waking and in the evening before bedtime, and to record the time of saliva collection. During periods of night work, they were asked to collect their saliva samples as near as possible to their usual bedtimes and getting up times so that comparisons could be made with periods when they were not working at night. Analysis of saliva samples was undertaken by Dr Benita Middleton.

Saliva samples for the nurses in this study provides a mean morning cortisol value of 13.22 ± 4.91 nmol/L which is significantly different ($p<0.001$) from the mean evening cortisol value of 4.60 ± 4.31 nmol/L. This confirms the known variation in cortisol concentration by time of day and therefore gives confirmation that the data collection analysis was carried out correctly and so further conclusions can be drawn from these results.

During periods of night work, the mean morning cortisol level for nurses was 10.93 ± 5.54 nmol/L (nanomolecules per litre) which was significantly lower ($p=0.038$) than the mean morning cortisol level of 15.52 ± 7.56 nmol/Lfor other times. As expected, these changes reflect disruption to nurses' usual circadian rhythm pattern as a result of working at night and sleeping during the day time (see 2.2.1). This reduction in cortisol levels in the mornings also supports nurses' qualitative accounts about the difficulties of remaining awake and sufficiently focused to carry out usual morning responsibilities such as delivering children to school (see 7.3.1, 7.3.3).

During periods of night work, the mean evening cortisol level of 5.48 ± 4.40 nmol/L was significantly higher (n=19, p=0.038) compared with 3.72 ± 4.53 for other times. Within the circadian system model, this indicates disruption to the usual circadian patterns of hormone secretion. It also suggests that the pressure which nurses describe as they complete household tasks before preparing to leave home for night shifts (see 7.3.2 and 7.3.3) is reflected in physiologically measurable stress.

Table 8.14 below shows mean cortisol values for nurses in the morning and evening during different stages of night work (before night shifts, first night shift, last or only night shift, after night shifts and when there were no night shifts). These data reveal differences in levels of physiological stress at different stages of night work which support nurses' qualitative accounts and provide important insights about how night work is experienced by women with gendered responsibilities for household management and childcare.

Mean cortisol values in the morning were lower following the final or only night shift compared with all the other mornings but these changes were not statistically significant. This may reflect disruption to usual circadian patterns but the lack of significant difference may reflect differences in cortisol levels between individual nurses. As night workers' circadian system and sleep may begin to adapt physiologically after several night shifts, this lack of significant difference may also reflect differences between nurses depending on whether just one night shift had been worked, or whether up to five night shifts had been worked consecutively. This lack of significant difference in morning cortisol values at different stages of night work may also reflect the times when cortisol samples were collected. Nurses' mean recorded time for saliva sample collection in the morning was 08:47 ± 1 hour 50 minutes which was significantly later (p=0.026) during periods of night work compared with other mornings (mean 07:38 ± 40 minutes, *n*=20).

Table 8.14: Nurses' morning and evening salivary cortisol values during different stages of night work and at other times (nmol/L)

	Morning (Mean ± S.D.) (n=17)	Evening (Mean ± S.D.) (n=16)
Not nights	14.88 ± 5.57	2.69 ± 1.06
Before nights	13.81 ± 5.09	2.40 ± 1.05
First night shift	12.17 ± 9.87	5.64 ± 3.85 [a,b,d]
Last or only night shift	9.86 ± 5.53	4.00 ± 2.81
After nights	12.44 ± 7.07	2.31 ± 1.52

a = significant difference ($p<0.005$) compared with "No nights"
b = significant difference ($p<0.001$) compared with "Before nights"
d = significant difference ($p<0.001$) compared with "After nights"

For evenings, nurses' cortisol secretion levels were significantly higher preceding the first night shift compared with the evening before night work commences, the evening after night work, and also compared with evenings not adjacent to night work. By this stage, nurses have not yet worked a night shift or changed their sleep pattern (few nurses were able to nap before night shifts commence) on the first evening of night work. Therefore, this suggests that the saliva data supports nurses' qualitative accounts of the pressure and anxiety evident during the very busy period immediately before the first night shift as nurses prepare to leave for work while also ensuring that evening meals, homework and evening activities proceed smoothly and arrangements for their absence overnight (including preparations for the following day) are in place (see 7.3.2). These indications are further supported by the lack of significant differences ($p=0.183$) in the timing of saliva collection in the evenings. The mean timings were 21:44 ± 3 hours 23 minutes during periods of night work compared with 22:47 ± 46 minutes on other evenings.

8.7 CONCLUSIONS – IMPACTS OF NIGHT WORK ON THE SLEEP AND MOOD OF NURSES, THEIR HUSBANDS AND CHILDREN

The data presented in this chapter concerning effects of night work on sleep and mood patterns reflect expectations for nurses based on previous physiologically focused research and these data also support and provide further insights into nurses' qualitative accounts concerning their experiences of night work in the context of gendered expectations of them

as wives and mothers. These data about specific days also provide insights into effects of nurses' night work upon the sleep and mood of nurses' husbands and children which supports and furthers analysis of husbands' and children's qualitative accounts about their lived experiences of their wives' and mothers' night work.

Nurses' self-reported sleep logs indicate that sleep timing is significantly delayed and sleep duration is significantly reduced for day sleep following night shifts when compared with night time sleep. Nurses' day sleep timing reflects school day timing and indicates the importance to these women of delivering and collecting their children from school and being available before and after school to meet their needs. Nurses' sleep duration is particularly short following a last or only night shift, reflecting nurses' accounts about feeling guilty for sleeping during the day, particularly when this delays re-establishing usual daily patterns and expectations for them and their families. Reflecting these changes to sleep and working patterns in the context of gendered expectations of them at home, data also indicate nurses' significantly worse alertness levels both before and after day sleep when compared with night time sleep and significantly worse mood on Cheerful-miserable and Depressed-elated scales during periods of night work. Saliva data also reveal significantly higher levels of the hormone cortisol being secreted in the evening immediately before night work commences, thus indicating increased levels of physiological stress and reflecting nurses' accounts about the pressures and anxiety involved in preparing for night work in the early evening while managing this busy period for their family and ensuring arrangements are in place for their imminent absence from home.

Although there has been some consideration of the ways in which night work may affect the wellbeing and relationships of night worker's partners and children (see 2.4.4 and 2.4.5), this has not included detailed consideration of lived experiences for husbands and children where their wives and mothers are working at night and nor has it included diary data about partners' and children's sleep and mood on specific days.

Sleep diary data from husbands indicates delays in the timing of sleep and reductions in sleep duration when their wives are absent from home on night shifts. While these changes are not statistically significant, they include delays in bed times and times of trying to sleep of up to 30 minutes. This supports husbands' accounts about more relaxed evenings and changes to sleep timing when they are able to take responsibility for their own evenings in their wives' absence. Sleep quality, alertness and mood scale data for husbands indicate

some small improvements and worsening in mood which are not statistically significant, supporting husbands' qualitative accounts in suggesting that there are no clear trends in husbands' overall mood during their wives' night work, and that the majority of night work's effects are experienced by their wives.

As for husbands, data for teenage children indicate delays in sleep timing and reduction in sleep duration during their mothers' absence on night shifts. Sleep timing is also delayed for pre-teenage children with a statistically significant delay of 18 minutes in bed time during periods of night work. These data support children's accounts about the more relaxed and unstructured evenings when in their fathers' care when their mother is absent on night shifts. Teenage children's mood data also indicate a small but significant improvement in mood on the Tense-calm scale during their mothers' night shifts. This supports qualitative accounts by indicating the increased calm which may accompany more relaxed evenings for teenage children in their mothers' absence. It also focuses attention on the ages of children involved in providing particular themes within qualitative accounts, revealing that most of the accounts about night work being boring and missing their mother in her absence are from younger children, while the independence in organising evening activities in the absence of their mothers' usual expectations may be particularly available to teenage children.

The insights which have emerged from the four analysis chapters concerning lived experiences of night work for nurses themselves and for their husbands and children are now considered together and in the context of existing literature in the following chapter.

Chapter 9 – Discussion: women's night work, family lives, expectations and responsibilities

9.1 INTRODUCTION

This chapter draws together key themes from the preceding four analysis chapters and discusses these findings in the context of sociological literature concerning families and gendered patterns. This involves bringing together accounts of women, husbands and children together with sleep log, mood scale and saliva data concerning impacts of night work on sleep and mood and considers how these findings may be further interpreted in relation to substantive findings and concepts from previous research.

In particular, this chapter draws on accounts of family members and other data concerning sleep and mood to discuss in detail how night work is organised and experienced within families as integrated units. This includes discussing how understanding of night work can be furthered by interpreting these findings in the context of the family relationships and gendered expectations which structure daily lives in these families.

This chapter also discusses how these influences of night work provide a "window" (Hislop and Arber 2003a) onto relationships and gendered ideology within contemporary families. This includes discussion about the extent to which normative gendered ideology about "appropriate" paid and unpaid work by women has influences for women working as nurses in this study.

The chapter opens with an overview of the influences of night work for nurses' children, husbands and nurses themselves. This overview draws on themes emerging from participants' accounts and other data presented in Chapters 5-8. Following this overview of the key themes from the four preceding analysis chapters, this discussion focuses around the ways this study provides insights into lived experiences of night work for nurses and their families. The first part of this discussion considers temporal structures for the consequences of night work within nurses' families and levels of activity at different stages within periods of night work. Subsequently, the central, moderating role of the nurse as mother and wife within normative gendered expectations of "good mothers" and the consequences of her absence during night work and the wider consequences of night work

for family relationships are considered. The findings of this study are then discussed in relation to the concepts of choice and tolerance. The complex and varying nature of the consequences of night work is then discussed.

9.2 SUMMARY OF FINDINGS: INFLUENCES OF NIGHT WORK FOR CHILDREN, HUSBANDS AND NURSES

Given the importance within this study of considering all family members' perspectives by family grouping as well as collectively, a summary of findings in relation to each group of family members follows.

9.2.1 Children

Nurses' children participating in this study talk about direct impacts of night work upon them and they also discuss their perceptions of night work within their lives more generally. For these children, their mother's absence at work and while asleep during the day is the key impact and resonates with the importance to many mothers of "being there" for their children (Cunningham-Burley, et al. 2005; Garey 1995; Garey 1999). Their mother's absence results in different adults being responsible for them and may allow children more independence in choosing the nature and timing of evening activities. However, at other times children's independence may be reduced by their mother's night work: this may include additional requests to assist with household tasks in their mother's absence or the need to maintain a quiet house to facilitate their mother's day time sleep. Sleep logs indicate that pre-teenage children may go to bed slightly later and that teenage children may go to sleep later when their mother is absent at work overnight. Self-reported mood scale scores also indicate that teenage children may be less tense and more calm during their mothers' absence from home during night work compared with other evenings. Although children focus on the impacts for themselves, they also demonstrate awareness of their mother's tiredness and moodiness during the period of night work, and that this has consequences for the general mood of the whole family. Despite emphasising the importance of their mother's presence at home, these children also indicate that her absence is not necessarily negative and that night work is not negative overall, but is accepted or normalised by nurses' children.

9.2.2 Husbands

Nurses' husbands participating in this study discuss additional responsibilities and freedom resulting from their wives' night work. Indeed, the same activities can involve both responsibilities and freedom or independence. For these husbands, this involves having responsibility for children and for some household tasks during periods of night work. However, husbands also indicate that these responsibilities and also free time in the evenings can be organised according to their own needs and style. Husbands may also extend their freedom to their children, allowing them to stay up later. Sleep logs indicate that many husbands go to sleep and get up slighter later when their wife is absent doing night work and that sleep duration may be slightly shorter overall. The accounts of husbands suggest that their sleep may be delayed because of the absence of their wives' expectations about the timing of sleep and shared bedtimes, and also because their wives' absence enables husbands to exercise independence in organising their sleep.

Many husbands in this study also indicate a caring concern for their wife and their desire to assist her and maximise sleep opportunities for her. Husbands discuss their awareness of the impacts of night work on their wives physically and on wives' mood. In particular, husbands draw attention to the emergent theme of a tripartite temporal structure of preparation and tension beforehand, the relative calm and focus during periods of night work, and then the 'recovery' phase. As might be expected given gendered expectations about emotions and identities, husbands generally appear reluctant to discuss missing their wife, but several indicate a sense of the relationship feeling "on hold" during periods of night work. This appears to resonate with the model of night work as disruptive of social relationships in common with effects on the circadian system and sleep (see Chapter 2). In justifying night work, many husbands cite benefits such as higher rates of pay for their wife, primarily or exclusively family-based childcare and associated reductions in childcare costs. Although many indicate they would prefer their wife not to work night shifts, the great majority of husbands indicate acceptance of this working pattern.

9.2.3 Nurses

For nurses, the focus is on managing their night work and their "duty" to their own families, alongside colleagues and patients. Sleep logs indicate that nurses' sleep duration is

significantly reduced for recovery sleep during the day (and especially following an only or final night shift) when compared with "usual" night time sleep. Self-reported mood scales also indicate worse scores for periods of night work compared with other times. Like their husbands, nurses identify three phases in the impacts of night work on themselves and family life: preparation starting weeks beforehand, tension nearer to the time, working the actual night shift which is often less taxing than anticipated, and the recovery and re-establishment of usual household routines.

Nurses discuss the relative freedom of working at night with more responsibility in the absence of managers and also the relative freedom of sleeping during the day in an empty house without the continual demands of children's presence and needs for emotional labour and support and guidance in their daily activities. However, the centrality of household responsibilities within the identities of these women is demonstrated by their gratefulness to their husbands and children for any help given during periods of night work, and the guilt about sleeping during the day which is often felt without the usual rhythm of "doing gender" through housework, childcare and other organising and moderating work. These accounts make apparent that being available and involved in their families' lives is very important to the self-identity of these women. Overall, while a small number indicate that they would like to stop doing night work, the majority of women in this study indicate that they accept night work as part of their nursing role and that they are grateful for the opportunities which it provides to undertake the majority of childcare themselves.

This summary has indicated the key themes in the consequences of night work for children, husbands and nurses themselves in this study. Emerging concepts and key findings in the consequences of night work for participants in this study are now discussed in the context of relevant literature. This discussion opens with the temporal structures of night work, and in particular the three phases of night work identified by nurses and their husbands.

9.3 THREE PHASES OF NIGHT WORK

Husbands in this study clearly identify three distinct phases of night work: preparation, during night work, and recovery stages. Nurses' accounts elaborate further on these emergent phases. Children's perspectives also do so, but to a lesser extent. It seems that husbands are best placed to identify these three phases, because as partners to the night working

nurses they are observers to the actual night work, and also secondary household managers and carers to the children. As such, husbands are aware of both long and short term planning, are conscious of their wives' changing emotions and mood, and in taking on additional household tasks and childcare when night work prevents or inhibits their wife from doing so, husbands are very aware of changes in household responsibilities, family dynamics and mood, and the consequences for themselves, their children and their wives.

As discussed in Chapters 6 and 7, identifying three phases of night work demonstrates that the influences of night work extend far beyond the actual night shift and indeed any daytime period of recovery sleep.

9.3.1 Preparation Stage

During the preparation stage, other family members' work patterns, childcare, transport for children and social activities may be planned by the nurses weeks or months ahead and the nurses as wives, mothers, and household managers are usually central to coordinating this. The focus of this responsibility on the nurses appears to be accepted because of gendered expectations about women's responsibility for children's wellbeing and the centrality of these responsibilities to the identities of these women. Later in the preparation stage, additional cleaning, clothes washing, food shopping, food preparation, and notification of specific tasks to other family members are undertaken by the woman. As the night shift nears, many women and their husbands report that the nurse's anxiety increases and some children report that the nurse's departure for work at a specific time in the evening may also create tension and a sense of pressured unease. These accounts are strengthened by saliva data which indicates a significant increase in cortisol levels (suggesting an increase in physiological stress) in the evening immediately before night work commences (when compared with other evenings).

9.3.2 During Night work

By contrast, although several nurses report finding it difficult to stay awake on their first night shift and in certain specialties the work may be very busy, most nurses indicate that they find the actual night shift less difficult to cope with than the preparation or recovery stages. Women in this study usually undertake specific household tasks before and after day time

sleep and these often include delivering and collecting children from school and preparing meals. Older children and husbands may be involved in household tasks at this stage, but tasks are usually simple, minimal and focused on current needs. Despite their tiredness following the night shift, women retain responsibility for housework and childcare and for supervising and supporting any delegation to their husbands and children. Time available for women to sleep during the day is limited by the timing of the school day and delivery and collection of children and some women experience difficulties in falling and staying asleep, but many also experience great relief at having this sleep and in so doing, experiencing a "periodic remission" (Schwartz 1970:491) from needs to fulfil or organise other tasks.

9.3.3 Recovery stage

The last night shift in a block of consecutive night shifts appears to signal a change and a focus on returning to usual patterns. The same applies following a single night shift. Sleep logs indicate that nurses' daytime sleep is significantly shorter following a last or only night shift when compared with sleep following other night shifts. Women also appear more likely to experience guilt at sleeping during the day time than when further night shifts must be worked. This appears to indicate a desire to limit the effects of night shifts and to promote return to the family's usual expectations and responsibilities. However, it is clear that this recovery stage may last several days. For example, although usual responsibilities may be resumed and most tasks which would have been completed during the night work period are dealt with in one or two days, most women and their husbands report that women's mood and sleeping pattern may not stabilise or return to usual patterns until several days following the end of night shifts. While these continuing effects within the recovery stage primarily relate to disrupting the circadian system and sleep, the effects on mood may result in differences in how nurses and other family members interact.

9.3.4 Revealing three phases of night work's social influences

These three phases of night work indicate that the effects of night work for nurses extend far beyond the actual night shift and affect all family members for several days with influences often affecting several weeks or months. It is well known that several consecutive days are needed for the adaptation of the circadian system and sleep to night work patterns, and that due to sleep deprivation and time needed to recover from accumulated sleep debt, several

days may be needed for usual sleep patterns to resume even where circadian adaptation has not occurred (for example, Akerstedt 2003; Barnes, et al. 1998a; Barnes, et al. 1998b; Bjorvatn, et al. 1998; Bjorvatn, et al. 2006; Gibbs, et al. 2002; Midwinter and Arendt 1991). This study's findings add new insights concerning social, emotional and physiological influences before night work commences, and also about the ways in which social and emotional effects of night work extend after night work alongside impacts on body physiology and sleep. Thus, the findings of this study indicate that social influences of women's night work do not occur only through the women's absence during night shifts themselves, but extend into preparatory and recovery stages of at least a few days. This is an emergent theme from participants in this study, and is not apparent in previous literature concerning night work.

Physiologically focused literature suggests that the primary social impacts of night work relate to negative consequences of family members not spending time together when the night shifts are being worked. However, the current accounts of night work's three phases indicate that the additional tasks undertaken by nurses and the emotional burdens associated with the preparation and recovery phases suggest that these periods before and after night shifts may have effects as great as or even larger than working the night shifts themselves. Indeed, even though these nurses are required to stay awake all night with responsibility for patients and then usually have a limited time for sleep during the following day, many nurses in this study mention that they enjoy being able to care for their patients overnight without undue interruptions. Similarly, after completing tasks such as taking children to school, many nurses enjoy indulging their urgent need for sleep without any of the responsibilities of the "fourth shift" of sleep-related care for anyone else in the house (see Hislop and Arber 2003c; see Venn, et al. 2008), even if this opportunity is only for a short period of time. However, even during this short opportunity for sleep, it is clear that gendered commitments are not abandoned: the majority of the participating women report that they sleep with one or more phones by their bed, so that if necessary they can be reached by their husbands, children, children's teachers or other adults undertaking childcare.

During the preparation phase, nurses prepare to move from one form of cyclical time (the usual 24 hour pattern of night time sleep and day time work, household tasks and emotional labour) to an "anomic" (Schwartz 1970) form of cyclical time with night time work and day time sleep, in which household tasks and emotional labour are fitted in as required and

where nurses' physical and emotional capabilities permit. Moving from one cyclical pattern of time to another appears to create tension. This tension involves anxiety about coping with both the physical aspects of long periods of time awake overnight and reduced sleep, and also increased work to reduce the need for essential time-critical household tasks during the period of night work and thus to moderate effects of night work on husbands and children.

The relative absence of challenges for nurses working each night shift and sleeping during the day is in contrast with the weight of gendered expectations about managing night work and minimising its effects for their husbands and children. Adam (1990:32), in discussing the significance of boundaries in social understanding of time, argues that the "working day" between 9am and 5pm is given more meaning through the sleep and preparation which precede it and the time freed from paid work in the evening than is available within the working day itself. If similar principles apply to night shifts, the temporal organisation and relative burden of these expectations of women becomes clearer: the preparation and recovery time for night work may have greater significance than night shifts themselves; and this significance may be heightened because of the contrast with preparation and recovery phases within husbands' and children's daily lives, and gendered expectations which these differences exert upon nurses to minimise effects of their working pattern upon their husbands and children, but while nurses themselves are living within that contrasting temporal pattern.

This transition from the usual cyclical pattern to an "anomic" (Schwartz 1970) night working, day sleeping cyclical pattern appears to involve nurses living in a form of linear time (Whitrow 1972) akin to manufacturing or service provision where work demands are continual alongside expectations concerning household tasks and childcare and no account is taken of nurses' needs for relaxation and sleep according to time of day. Cyclical time has been characterised as "feminine" and related to the cycles in nature and caring needs; while linear time has been characterised as "masculine" and involving consistency over time, often with a focus on production (Davies 1990; Griffiths 1999). The demands of this pattern of night work, combined with continuing gendered expectations within the household and the need to minimise effects of night work for husbands and children, and while becoming accustomed to a different temporal structure demonstrate the pervasiveness and extent of night work's influences for nurses in this study.

In this context, it seems that meeting expectations in paid employment and at home with limited opportunity to consider their own needs for relaxation and sleep, and while dealing with physical demands of night work may increase negative consequences of night work for nurses and the total time period during which effects of night work may be experienced. So tension arises as women seek to meet expectations in their paid employment and in their lives as wives and mothers, alongside the physical demands of night work and the effects on their mood. In combination, there are considerable additional demands on these women as they work night shifts. Within the concepts of work/family interfaces, these changes to availability, sleeping patterns and organisation of household tasks would be regarded as severe work to family spillover (Grosswald 2003).

The elements of the preparation and recovery phases of night work relating to the organisation of housework and care might also be recorded as creating additional family to work spillover, as this additional tension and the need to be available to children may increase fatigue and will usually prevent additional sleep within the 12 hours before night shifts commence. Women in this study acknowledge that they are usually very busy and tired as a result of their night shifts and ensuring housework and childcare are organised with minimal effects for their husbands and children. In some cases negative sentiments are expressed about night work because of their concerns about the effects this may have on their family, reflecting normative gendered values about "appropriate" patterns of paid and unpaid work for partnered women with children.

These three phases of preparation, doing night work and recovery from night work appear integral to understanding processes and lived experiences of night work for these families. In this model, women displace household tasks where possible to before or after the period of night work, and nurses do considerable planning to ensure their families and households are provided for and run smoothly during the period of night work when they are physically unable to fulfil these tasks, and to ensure usual routines are resumed as soon as possible following night shifts. Discussion now moves on to consider the intensity of activities at different points during the three phases of night work discussed above.

9.4 COLD SPOTS BECOME COLDER AND HOT SPOTS BECOME HOTTER

The three phase temporal structure to night work appears to identify a displacement of household tasks so that only those which are time-critical and essential occur in the middle phase during night shifts, whether these are completed by the nurse herself or are delegated to her husband or children. Those tasks which can be completed earlier or later are planned for nurses to complete in the preparation or recovery phases. While this reduces expectations and tasks during the night shift period, this simultaneously increases the level of expectations and tasks to be completed by nurses in the preparation and recovery phases. Accounts indicate that emotions may already be tense during the preparation and recovery phases due to anticipation and recovery from the physical impacts of night work on nurses and also negative feelings about managing these changing responsibilities and being absent from the family home during the evening, night and early morning. Drawing on Southerton's (2003) twin concepts of "hot spots" and "cold spots" of intensity of activity and tasks within family routines, it seems that night work results in "hot spots" becoming even hotter, while "cold spots" become colder. Southerton identifies "hot spots" as "harried" periods immediately preceding set commitments, such as the start of school or work or mealtimes, while "cold spots" are identified as valued, extended periods of interaction with family and friends. Southerton indicates the interdependence of "hot spots" and "cold spots" with the former regarded as necessary to allow the latter to occur.

9.4.1 "Hot spots" become hotter

Drawing on Southerton's (2003) analysis, women displace tasks from the period of night work into the preparation and recovery phases, or by delegating time-specific tasks to husbands and children. Although nurses have at least 20 hours off work immediately before a block of consecutive night shifts, other shifts may be worked from 23 hours after a night shift ends and husbands' and children's work and school schedules continue as usual. This means that existing "hot spots" of activity in the preparation and recovery phases of night work are likely to become hotter, as additional tasks and planning are required. Although Southerton (2003) does not refer to emotional consequences of these "harried" periods, this analysis and the perspectives of children, husbands and nurses in this study on the increased tension and moodiness prevalent before, after and during night shifts suggest that

"hot spots" in the preparation and recovery phases are likely to be particularly highly charged. In particular, both children and nurses (see Chapters 5 and 7) refer to the evening and meal time immediately before the nurse's departure for her first night shift as particularly busy and disruptive to usual patterns. Saliva samples collected by nurses during the evening before night shifts indicate increased levels of cortisol being secreted compared with other evenings (see Chapter 8). This change suggests higher levels of physiological stress immediately before night work. These saliva data which involve no element of self-assessment strongly support the accounts of women and their husbands which indicate that women's mood may change due to increased pressure and anticipation as the beginning of the night shift period approaches. It seems this time is likely to be particularly stressful and emotionally charged as the nurse prepares for work after a whole day awake and anticipates the night shift(s) ahead, feeds her family, completes essential household tasks, ensures plans are in place for herself and other family members to complete tasks during the period of night work and then leaves the family for work at what is a busy time with extra-curricular activities and homework to be completed. The busyness of this period when nurses depart for night shifts may also provoke guilt and anxiety, highlighting to the women the way in which this night work pattern contravenes normative gendered expectations of women's paid work and family responsibilities.

Children's and husbands' accounts indicate that mornings before school and work may be hotter than their usual "hot spot" status. Usually nurses will not have returned until near the end or after this period, and therefore nurses are unlikely to be involved in directly managing it. Sleep logs, audio sleep diaries and qualitative interviews indicate that some children and husbands may get up slightly later than usual when their mother or wife is absent from home on night shifts. This may partly result from a more relaxed previous evening and later bed times the night before. Additionally, children's and husbands' unfamiliarity with managing this morning period under tight time pressure in the absence of their mother or wife, and without her preparations during the later part of the previous evening, together with their concern not to increase demands upon her through leaving tasks undone, may result in this "hot spot" also becoming hotter, with many tasks to be completed in a short period. Although nurses may be absent during this "hot spot" when on early shifts or long day shifts, nurses' accounts suggest that for these shifts they undertake preparatory work such as preparation of lunch boxes and school uniforms the previous evening or before leaving for work in the very early morning. This suggests that children and husbands may experience together a period of intense preparation for the day with a non-negotiable deadline of their

mother/wife returning from a night shift or the beginning of their working or school day. This need to work together with moral expectations about meeting these deadlines may enable shared understanding to develop between husbands and their children or it may involve a stressful period during which fathers attempt to encourage children to rapidly complete tasks in a manner to which they are not accustomed within mothers' usually consistent approach.

9.4.2 "Cold spots" become colder

By contrast, the accounts of children and husbands of night working nurses in this study indicate that "cold spots" in the evening may become colder and slightly altered during periods of night work. Chapters 5 and 6 indicate that both children and husbands may experience evenings as more relaxed, less structured and with fewer obligations when their mother or wife is absent from home at work overnight. Both children and husbands describe this as a time when, in the absence of reminders from their wife/mother about the completion of certain tasks and certain usual timescales, they experience more freedom to undertake activities and to go to sleep later than might occur if their wife/mother were present.

These accounts are supported by sleep log and mood scale data. Analysis of sleep log data indicates that husbands and children go to bed later and go to sleep later during periods of night work when compared with other times. Further, analysis of self-reported mood scales indicates that teenagers in this study report feeling calmer in their mothers' absence at work on night shifts compared with other times (see Chapter 8). Although some (especially pre-teenage) children and husbands indicate that they miss their mother or wife or feel lonely in her absence, the majority of children and husbands of night working nurses in this study appear not to be concerned by her absence. Several children and husbands report enjoying this relaxed and very "cold spot" time together or going out to spend time with friends outside the home. This may help to strengthen paternal-child bonds and also friendships beyond the immediate nuclear family. Additionally, children's and husbands' accounts suggest that these free evenings provide opportunities for relaxing alone without interruption. Such time spent alone reading, watching films, playing games and generally relaxing does not appear to fit within Southerton's definition of "cold spots" as "time devoted to interaction with significant others" (p.19) and as "necessary to maintain caring interpersonal relationships" (p.22). However, while these ultra-cold "cold spots" may not fulfil the former definition, they may contribute to the latter. Indeed, this may provide vital "backstage" (Goffman 1971) time to relax, recuperate and rebuild their public selves, with retreat even from the relative

"backstage" of family relationships. As such, this may enable fathers and children to follow their own interests, exercising their independence in the timing and activities of usual family evenings in the presence of their wife or mother. At the same time, these evenings spent together without the mother's usual organising structure may strengthen father-child relationships.

Weekend mornings following nurses' night work may also provide "cold spot" time for children and husbands to interact without any particular expectations or time-specific demands. However, although this may provide uninterrupted time together, the benefits may be diminished by the inherent expectations. Usually there will be an underlying expectation about fathers and children spending time together and remaining outside the family home for a set period of time to facilitate their mother and wife's uninterrupted sleep at home following her night shift. Although some children and husbands may experience this as positive time, accounts suggest that this opportunity is marred by the underlying expectation and the obligations regarding location and timing and being unable to identify it as a family outing, because of the absence of their mother and wife. This again emphasizes the ways in which husbands and children regard the presence of their wife/mother as essential to regarding their activities as those of a "proper" family. This again supports the importance of mothers' presence in constituting normative family activities by "being there" for their children (Cunningham-Burley, et al. 2005; Garey 1995; Garey 1999; Ribbens McCarthy, et al. 2002): both in their physical presence and in their availability for caring work as needed. This suggests that mothers' presence is important to "be there" in potential and actual availability, but also importance of presence in displaying "proper" family.

Southerton's (2003) concepts of "hot spots" and "cold spots" have facilitated discussion of varying levels of busyness and expectation within periods of night work. It appears that busy periods at the end of the preparation phase and also just prior to the nurse's return from a night shift may become busier and more emotionally charged with expectation. The period during night shifts may provide very relaxed times for children and husbands. The evening when nurses are absent from home overnight appears to provide particularly valuable opportunities for social time with other family members or friends inside or outside the home. Weekend mornings when the nurse is asleep following night shifts also appear to present relaxed social time, but their wife/mother's absence may diminish enjoyment for husbands and children participating. This is in marked contrast with husbands' and children's accounts

of relaxed and enjoyable evenings while their wife/mother is absent on night shifts and without normative expectations about how the evening should be conducted.

It is notable that while colder "cold spots" are the primary change for children and husbands, the primary change for nurses is hotter "hot spots." The greatest effects of night work are felt by nurses who manage the physical effects, and then because of the lack of congruence between their night working pattern and normative gendered ideology concerning "appropriate" paid employment for "good mothers", nurses then seek to manage effects of their night work and the organization of household tasks, childcare and family activities to minimise influences on their children and husbands. This absence of opportunities for relaxation and the marked increase in expectations on nurses is in contrast with the opportunities for relaxed evenings for husbands and children in the nurses' absence on night shifts. The central role and gendered expectations of nurses as wives and mothers in the context of their own night work is now discussed.

9.5 NURSES AS MOTHERS AND WIVES: "BEING THERE" AND BEING MODERATOR

It is clear from this study's findings that the majority of the effects of night work are felt by participating nurses themselves. These effects of night work for nurses are a combination of physical impacts of this working pattern, and additional work carried out by nurses to ensure both that they meet usual expectations of themselves as wives and mothers, and that they minimise consequences of night work for their husbands and children, and in so doing demonstrate their commitment to normative gendered ideology concerning "good mothers".

As night workers, nurses in this study attest to the physical and emotional demands of staying awake overnight while working, initiating and remaining asleep as opportunities allow the following day and then continuing to work subsequent shifts. Nurses' accounts indicate that opportunities for sleep during the day are constrained by gendered norms about responsibility for childcare. In practice, this means that women are expected to deliver and collect their children from school and to be available and providing care and assistance before and after school. Additionally, women feel and fulfil expectations to provide care during the school day if this becomes necessary (e.g. through children's illness). Sleep logs also indicate that nurses' sleep duration is significantly shorter following night shifts when

compared with night time sleep, and significantly shorter following a final or only night shift when compared with sleep following other night shifts. In combination with nurses' accounts, these sleep log data suggest the importance to nurses of moving away from sleeping and housework patterns associated with night work, and moving as quickly as possible into the recovery phase in which usual patterns of family and housework activity resume. Alongside these changes to sleep and how they feel physically, nurses indicate they undertake considerable preparatory work to ensure the household runs smoothly and that minimal effects of night work are experienced by their husbands and children during their absence at work at night shifts, and also during the period between or immediately following night shifts when they are able only to complete minimal tasks and emotional labour, and during the recovery phase after night work ends.

This focus on ensuring the household runs smoothly in their absence on night shifts and in general during periods of night work suggests that women are attempting to present their household as functioning as usual, despite their transgression against normative expectations of mothers by being absent from the family home overnight while working night shifts. This also suggests that women may attempt to maintain the sense of "being there" for their husbands and children by ensuring that processes which they have initiated operate as usual and so that their husbands and children might almost forget that they were absent from home. Ribbens (1994) has likened the challenges of bringing up children to a balancing act of the variety which requires cycling without hands on the handlebars – but without any audience to witness or appreciate the effort involved, until any shortcomings become apparent. It seems this analogy can be applied to the efforts of women in minimising effects of their night work on their husbands' and children's usual routines and the invisibility of these considerable efforts to safeguard their families and to demonstrate their commitment to maintain identities as "good mothers."

It is clear that the primary driver of the temperature of "hot spots" and "cold spots" is the activities and management of the nurse herself, given the primacy of her gendered role as a mother and wife. It is notable that even while anticipating, feeling and recovering from the physical impacts of night work, nurses are also managing and taking on extra tasks which then reduce the need for husbands and children to become involved with any of these tasks. Therefore, it is clear that night work has a double impact on nurses in this study: in dealing with the impacts of night work for their own routine, sleep and social interaction; and in

managing household tasks and their families' needs to minimise the effects of night work for their husbands and children.

Drawing on concepts of standard working patterns for partnered women with children and associated gendered expectations regarding the division of domestic labour, it appears that both the "first shift" of paid work and the "second shift" of household tasks are amplified for nurses during night work because of the changes to work, sleep and family routines, with the "second shift" also being increased in both the preparation and recovery stages. While it appears that the "second shift" of household tasks (see Hochschild and Machung 2003), "third shift" of emotional labour (see Hochschild 2000; Kremen Bolton 2000) and "fourth shift" of children's needs at night (Venn, et al. 2008) are delegated to husbands and older children while night shifts are in progress and for the period between and immediately after night shifts, nurses' accounts suggest they retain a sense of responsibility for these needs. In particular, it appears that, as with the "second shift" of housework and childcare, husbands and older children undertake only time-critical and immediately required tasks (for example, meal preparation and supervising bedtimes). It seems that more general emotional care and responsibility is not delegated to husbands and older children, but remains the responsibility of women as wives and mothers. For example, accounts indicate nurses sending and receiving text messages and phone calls regarding problems or confirming all is well at bedtime during night shifts, preparing packed lunches and relatively simple evening meals for their families between night shifts, and also valuing being present for an evening meal between night shifts when children and husbands can raise any concerns and receive support.

Therefore, the accounts of nurses, husbands and children in this study suggest that there is a shared gendered expectation for nurses to "be there" as wives and mothers (see Garey 1995; Garey 1999) and to manage the household and the physical and emotional needs of their husbands and children even while coping with the demands of working night shifts and when not necessarily present in the home. Taking this with husbands' and children's accounts of the lack of structure apparent within the timing and nature of evening activities during the nurse's absence at work overnight, it is clear that nurses in these families fulfil a central role in their constant presence, attention to and maintenance of the physical and emotional needs of family members and household management. Within family members' accounts, it is clear that nurses' availability to complete tasks, provide care and to support their husbands and children is important within their families' daily lives as part of gendered

expectations about responsibilities for the household and husbands' and children's wellbeing. Within these accounts it is also clear that the importance of nurses' supporting work is heightened in the context of night work because of the ideological imperative to minimise threats to women's identities as "good mothers" through night work breaking normative expectations about women being present at home and available as needed during the evening and night.

To draw upon a biological concept, within these families women may be seen as a "homeostat." Homeostasis is the process by which the body regulates certain key levels to ensure the body functions normally without problems. This process applies to levels of concentration within cells, with excess being allowed to pass out of cells and deficiencies made up by allowing additional levels of fluid to pass into cells (Clancy and McVicar 1994: 15-16). Within these families, the accounts of women, their husbands and children suggest that women, in continually doing work to reproduce their family and its usual patterns, perform a regulatory role which ensures that key tasks and care occur regularly and also as required so that relationships and the emotional equilibrium of all family members are managed and maintained in ways which work to prevent undue difficulties in most circumstances. By continuing to ensure that existing levels of responsibilities are fulfilled during periods of night work (managed through increased levels of activity in the preparatory and recovery phases to mitigate their absence during night shifts), the women in this study partially alleviate potential adverse effects of their absence upon their relationships and the wellbeing of their husbands and children.

The centrality of the expectation about "being there" and providing for their families as required is illustrated by nurses' continued fulfilment of family and household needs except when this becomes a physical impossibility through absence at work. Even then, nurses' preparation and willingness to provide support by telephone or text message if needed demonstrate they are "being there" even if their presence is not a simultaneous or physical one. This strongly contrasts with Hertz and Charlton's (1989) findings in families where men work at night as air force security guards. In these families, even when working full time, wives take responsibility for altering their own and their children's daily routines to align with that of their night working husband and father. In this study, as far as possible, nurses change their night working and day sleeping patterns to align with usual patterns for their family. Thus, not only are families usually not changing their routines to fit mothers' night work, but these night working women are changing their night work routines to fit family

routines. Further, nurses are making these changes as wives and as mothers, even though they are also experiencing the full effects of night work.

Further, this focus on managing and meeting the needs of their husbands, children and households and minimising any delegation indicates that nurses in this study moderate the effects of night work for other family members. Moderation is a concept frequently employed when discussing relationships between variables when conducting quantitative analysis of large datasets. Indeed, moderators have been discussed in relation to commitment to night work, but without reference to details of the process of moderation (Barton 1994). Frazier and colleagues (2004) discuss how moderation involves one variable in certain circumstances affecting the outcome reached by a predictor. Here, women are the moderating variable, influencing when and for whom night work has effects: women are acting to ensure that they minimise effects of night work for their husbands and children as far as possible.

While several nurses in this study express concern about the impacts of night work on their family, moderating these impacts as far as possible for other family members does not appear to be a deliberate strategy but rather fulfilment of an unquestioned gendered expectation. This suggests that nurses as wives and mothers feel obligated either to undertake all their usual tasks or to re-arrange these tasks through changing the timing (as in the preparation and recovery phases for night work discussed above) and asking for small amounts of assistance through delegation. The power of these normative gendered expectations and their integration within mothers' identities as "good mothers" is demonstrated by their unquestioned assumption and fulfilment. These are considerable additional responsibilities and they illustrate the extent to which night work may be regarded as a normatively inappropriate working pattern for partnered women with children. An analogy can be seen in McRae's (1986) study of "cross-class families" in which women hold occupational positions considered to be socioeconomically superior to those of their husbands. In a similar way to night work, this superiority of women within the labour market may be seen as normatively inappropriate for "good mothers" who are dedicated to their children's needs. Within McRae's study, a proportion of the women took full responsibility for household tasks, despite the pressures of their paid employment. McRae suggests that women's continued assumption of these responsibilities in the context of their occupational superiority may be intended to demonstrate their continued commitment to their femininity

and gendered expectations of them and in doing so to reduce the potential for marital conflict by facilitating their husband's continued gendered superiority within the marriage.

The accounts of husbands (see Chapter 6) and children (see Chapter 5) suggest that husbands are much more aware of additional responsibilities and of the impacts of night work more generally than are their children. This suggests that while nurses as wives and mothers bear the greatest level of impacts of night work through working on this pattern and moderating these impacts for other family members, the delegation of certain tasks means that husbands themselves moderate impacts of night work for their children, and to a lesser extent, for their wives. This suggests a model of impacts and inter-related moderation for nurses, husbands and children in the context of nurses' night work.

The next section of this chapter discusses the roles of husbands and fathers during nurses' night work.

9.6 HUSBANDS AND FATHERS AS SECONDARY MODERATORS

While nurses experience the greatest effects of night work on their sleep patterns, sleepiness, additional pressure on their responsibilities for managing the household and also moderation of night work's influences to minimise effects for other family members, it is also clear that most husbands in this study provide additional support to nurses and to their children during periods of night work. While there is variation between husbands in the amount and nature of tasks and responsibilities and with some differences related to the nature and timing of husbands' paid work and the ages and needs of children, there are emergent key themes which are now discussed. These relate to the tasks and responsibilities which husbands and fathers in this study carry out in the context of nurses' night work; how husbands and fathers do this work; and the importance of men doing this work for their wives and for the effects which night work has on the whole family.

9.6.1 Tasks and responsibilities for husbands and fathers

The accounts of all family members suggest that the tasks and responsibilities taken on by husbands and fathers during periods of their wives' night work are primarily those deemed to be essential and time-limited. As discussed in 9.3 above, nurses in this study usually

undertake preparation prior to the onset of night shifts which removes the need for additional cleaning, clothes washing or food shopping and may also minimise the need for food preparation. Therefore, family members in this study generally report husbands and fathers completing tasks such as preparation or re-heating of simple meals, washing up dishes, collecting and delivering children to and from school and supervising children's bedtimes and morning routines when their nursing wife is absent from the home and deemed unable to undertake these tasks during daytime sleep. A small number of husbands also report preparing more complex meals or being asked to undertake more involved tasks such as ironing or putting away clothes, but these accounts suggest such tasks are only taken on or requests made where it is clear the husband has a particular skill, enjoys or is familiar with the activity.

However, there are no accounts suggesting that fathers provide care for children's emotional needs except where a particular situation arises which demands this. Even in these cases, children's accounts suggest that the emotional care provided by fathers is qualitatively different from that provided by mothers. This suggests both differences in the way in which emotional care is provided, and also an orientation to mothers' provision of emotional care as normative. Overall, it appears that while husbands are important in maintaining family routines and in moderating the impacts of night work for their children and providing support to their nursing wives, the tasks and responsibilities assumed by husbands and fathers in this study are limited to the middle phase during night work and are usually time-limited and relatively simple and specific tasks which do not involve assuming all the responsibilities usually fulfilled by their nursing wives. However, nurses in this study demonstrate high levels of appreciation for the tasks and responsibilities assumed by their husbands. This further confirms the sense of gendered expectation for household and family responsibility felt by nurses as wives and mothers.

9.6.2 How do husbands and fathers carry out domestic tasks and responsibilities?

Husbands and fathers ostensibly undertake many of the same tasks fulfilled by their wives at other times during periods of night work. However, the accounts of all family members indicate that husbands and fathers usually do not execute these tasks and responsibilities in the same manner as their wives, and also that there is no expectation that they should be carried out in the same manner. In general, the approach of husbands and fathers appears

more relaxed and less focused than that of their wives. For example, all family members report that meals prepared by husbands are likely to be more simply prepared and less healthy. Similarly, husbands appear to display more relaxed attitudes to their own and their children's bedtimes in ways which reflect gendered norms about the importance and maintenance of family rules and expectations of behaviour. Additionally, while both children and husbands indicate that they enjoy spending time together, children's accounts do not suggest their fathers undertake supportive emotional labour during this time in the same manner as their mothers. Indeed, children draw attention to the importance they accord to their mother's presence and indicate that their mothers may be more consistent and predictable than their fathers' alternately lenient and then strict approach.

Fathers' inexperience and also their exemption from expectations of mothers to enforce appropriate behaviour among children may offer a partial explanation for these gendered differences in the accomplishment of domestic tasks and responsibilities. In particular, the limits placed on delegation by gendered expectations about "good mothers" resonates with Beck and Beck-Gernsheim's (1995) indication that while the "second shift" of specific household tasks may be hired out, this is not possible for the 'third shift' of emotional labour. While child care by fathers may be the most acceptable for employed women seeking to meet expectations of "good mothers" (Riley and Glass 2002), gendered understandings about the ways in which mothers and fathers are able to best care for their children pose limits on father care. Providing emotional care for children is seen as being central to mothers' gendered identities as "good mothers" and therefore not a legitimate aspect of fathers' care for children. Similarly, retaining overall responsibility for the wellbeing of family members and for household management are seen as crucial in mothering. Indeed, some nurses in this study indicate the importance to them of undertaking additional preparation and recovery work and minimising delegation to maintain certain household standards. In actively managing housework and emotional wellbeing in the context of night work, they are both minimising any negative effects of night work upon their husbands and children, and through doing so, these women are practising what is central to their gendered identities as "good mothers."

9.6.3 Value of husbands' assistance and support

Despite these apparent limitations on the extent and nature of delegation to husbands, nurses' accounts suggest they are very grateful for this assistance during periods of night

work to ensure that their household is running as smoothly as possible during periods of night work. This supports the findings of Loudoun and Bohle (1997) and Pisarki and colleagues (1998) which both indicate the importance of support from family members for women doing shift work. While it is not made explicit, it appears that the support discussed in these studies is general social support rather than any specific assistance with household tasks. This then suggests that for nurses in this study, there is more value in the support inherent in husbands' and children's assistance with household tasks and responsibilities, rather than in the specific tasks and responsibilities delegated. While the maintenance of household routines may be important, especially in providing stability for younger children, it seems that nurses accord significant value to their husbands' and children's assistance by removing the need for nurses to undertake any further moderating activity. Presumably with such support from husbands and children comes acceptance of the effects of night work upon nurses and other family members, and some temporary relief from the usual gendered expectations of nurses as wives and mothers.

If family members were not supportive of their night working pattern, nurses might feel obligated to undertake further preparatory work or increase the effects of night work on themselves through reducing sleep opportunities to provide time to maintain household routines and the completion of usual household tasks apart from when actually absent on night shifts. Alternatively, if family members were unsupportive and perhaps demonstrated directly or indirectly that they felt nurses were not meeting gendered expectations, nurses might feel they had to cease working at night and therefore would not be part of this study's "survivor" population (Harrington 2001).

Husbands' accounts suggest concern for the vulnerability of their wives after the demands of working at night and having minimal, poor quality sleep. Husbands appear to express this by directing themselves towards trying to minimise the need for their wives to undertake domestic tasks on returning from work or waking following day sleep, and by maximising sleep opportunities for their wife by getting up before her return and by keeping children quiet. As such, husbands in this study demonstrate concern for their wives and a desire to moderate impacts of night work for them. In doing this, husbands' focus is on time-specific and urgent tasks rather than on other household tasks such as cleaning and washing which need to be completed regularly but not at particular times.

Husbands' completion of additional household tasks appears to play a role alongside their wives in moderating the effects of night work for children. Husbands may achieve their contribution by working to maintain usual patterns of activity within families during the absence of their wife on night shifts. Additionally, husbands' support and assistance appears to have a role in partially moderating effects of night work on their wives through relaxing expectations about household tasks and responsibilities being completed in the usual manner. However, although women may value this support and understanding, it appears that this does not have any significant impacts on the overall levels of expectations which the women feel to assume responsibility for the wellbeing of their husbands and children in the context of night work. So while husbands' assistance with certain tasks may reduce some of the potential additional pressure on their wives during night work, it is clear that this assistance is available only because their wives are working night shifts.

9.7 RELATIONSHIPS "ON HOLD"

Just as household tasks may be reduced and altered in timing, nature or style of completion, many family members participating in this study indicate that couple and family relationships and social lives beyond the family may be somehow altered and frozen or "on hold" during periods of nurses' night work. However, unlike household tasks, for which there may be a frenzied, burning "hot spot" in the preparatory phase and another in the recovery phase, participants indicate that changes in social interaction and relationships may begin in the preparatory phase and continue through night work and into the recovery phase.

9.7.1 Couple relationships

Several husbands and also some wives participating in this study indicate that their relationship with their partner feels different and less close through the immediate preparatory phase, during night work and in the recovery phase. Couples have very limited time together during periods of night work and even less time alone for planning and decision-making, supporting each other, or for the intimate or sexual sides of their relationship. Additionally, children, husbands and wives participating in the study indicate that the nurse is likely to be more moody, tense and with less patience throughout the period of night work and the preparatory and recovery phases. During the nights immediately after night work is completed, several couples also indicate that the nurse may have disturbed

sleep as she returns to her usual sleep pattern and this may in turn disturb her husband's sleep. Although nurses and their husbands may draw strength from working together in moderating the impacts of night work on them and their children, nurses and their husbands in this study demonstrate awareness of the higher risk of relationship breakdown when undertaking shift work including night work (see Presser 2000; White and Keith 1990) and indicate their feeling that night work largely removes opportunities for rebuilding "public selves" (Goffman 1971), developing couple relationships and that understanding from both partners is needed to successfully work night shifts and sustain a healthy couple relationship.

9.7.2 Family relationships

While some husbands and children indicate that nurses' night work strengthens father-child relationships, children also mention a strong feeling that family life is different from usual when their mother is not present and that this effect is stronger than if their father were absent. This indicates an understanding of mothers and their gendered household management and care for physical and emotional needs of their children and husbands as central to "normal" family life. Additionally, their mother's absence from home overnight when working night shifts and when asleep the following day appears to provide children with insights into gendered differences in the parenting styles and expectations of both their parents. Most of the children indicate a preference for their mother's consistent and supportive, if sometimes irritating expectations of themselves and their siblings over their father's less consistent approach which may incorporate both greater leniency and a more strict approach than their mother would allow. As such, in putting "on hold" usual expectations, night work appears to provide children with opportunities to evaluate what they appreciate about the parenting styles of both their parents, and to experience quality time with their fathers. This may assist children in developing understanding of the expectations upon their parents and the usual ways in which they interact with their children. In turn, this may assist children in understanding how to develop more positive relationships with both their parents.

9.7.3 Social lives beyond the family

While their mothers' and wives' absence at work overnight or during day time sleeping may provide opportunities for husbands and children to spend time socialising with each other or away from the family home, it appears that nurses' night work primarily limits their own social lives beyond the family. While some husbands and children went out socialising during nurses' night work during the study, it appears this is limited by the ages and needs of children and the need to coordinate this with the specific shifts. Several nurses, husbands and children in this study communicate their annoyance at the limits which night work places on opportunities to socialise beyond the family during night work and in the preparation and recovery phases due to the physical demands of night work on nurses, the delegation of household tasks and responsibilities, the need to facilitate day time sleep by maintaining a quiet house, and a general sense of heightened tension, moodiness and family life and couple relationships being "on hold." This annoyance among husbands and children concerning night work's effects on opportunities for family activities and socialising is heightened where night work and the immediate preparation and recovery phases extend into weekends. This demonstrates the difficulties which may arise when night shifts and especially the associated preparation and recovery times coincide with times which may be generally understood to be available for leisure and to be organised within families rather than affected by external structures such as paid employment (Silva 2002). In contrast with the focus within previous research on the amount of shared free time in the context of shift work (Volger, et al. 1988), these accounts about relationships being "on hold" and families' lives feeling qualitatively different suggest that night work can result in a pause in the "doing" and "being" of family relationships. These accounts about overall perceptions of relationships and families, taken together with husbands' and children's accounts about more relaxed evenings suggest pauses in usual family relationships which may create unhelpful vacuums in shared understanding and experience across whole families and between partners, but which may also provide opportunities for closer shared understanding to develop between children and their fathers.

Thereby, the accounts of family members in this study indicate that night work places usual couple and family relationships "on hold." Additionally, there may be obligations or opportunities to spend time socialising outside the family home without nurses as wives or mothers.

9.8 CHOICE AND TOLERANCE

Existing literature on night work draws on what Nachreiner (1998) argues is a biologically focused concept of tolerance to discuss the ability and likelihood of individuals to sustain a night working pattern. Within this biological focus, but with some acknowledgement of the gendered division of domestic labour and the impact of this for women working at night, it has been asserted that having "choice" about shift schedules is important in increasing individuals' tolerance to night work (Barton, et al. 1993; Härmä 1993).

Within the accounts of the participants in the present study, choosing to work at night was not mentioned directly. Indeed, the ways in which nurses, their husbands and children speak about night work confirm contentions discussed in 2.3.2 about "choice" and "tolerance" being misleading in their conceptual simplicity and focus on individuals in ways which do not reflect how gendered expectations and the complexities of family relationships structure how decisions are made about paid employment and night work specifically, and how this is managed within families.

For families in this study, there did not appear to be any particular sense of night shifts playing a role in following a nursing career. Several of the nurses had qualified fairly recently after working as health care assistants and attested to the considerably greater responsibilities and pressure of work on all shifts as a qualified nurse. Several of the couples indicated that nurses had also worked part time on nights only when they had young children and had found this useful in meeting gendered expectations about "good mothers'" caring for young children while also greatly reducing the costs of formal child care. However, even where nurses discussed how night work may facilitate their fulfillment of gendered expectations about "being there" for their children during the day time (Garey 1995) there was no clear sense about nurses selecting night work or a career in nursing for this reason. Indeed, most of the participating family members appeared to orient to night work as something to be "weaved" (Garey 1999) in to their lives as a working pattern which could be accommodated, but not oriented to as a choice. Considering this at localized and specific level, with considerable variation between hospitals, specialties and wards, there is some scope for nurses requesting to work or not to work on particular shifts and also to swap shifts as necessary. Although a simplified view of this process suggests that at one level choices are being made, nurses in this study did not regard these requests as making

choices. Rather, they referred to adaptations in their working pattern which were essential in facilitating nurses' organization of family life, including making arrangements for childcare and transport of children to their activities. Given the power of normative gendered ideology about "good mothers" and nurses' concerns to moderate effects of night work for their husbands and children, such requests are not choices but involve organizing work to facilitate the continuing organization of daily and nightly family lives.

The key theme for nurses, husbands and children in this study is a sense that night work is required as part of a nursing career and that shift work as a whole facilitates nurses being in paid employment (often full time) in a fulfilling career while also meeting gendered expectations of managing the household and caring for children. Choice is not a key theme but rather acceptance that night work is required and can be sustained and managed within family life due to mutual support to minimise potential problems.

9.9 COMPLEXITY WITHIN NIGHT WORK: NEGATIVE, POSITIVE, DON'T KNOW?

As one of the few sociologists to consider the impacts and contexts of night work for women and their families, Harriet Presser (2005) has indicated the importance of considering complex and varying outcomes for different family members. The perspectives of nurses, their husbands and children within this study attest to the complex and differing ways in which night work can have influences for family lives and how these influences can be moderated

The extent of complexities shaping experiences of night work is demonstrated by the same individuals experiencing both positive and negative effects of night work. For example, several fathers indicate that they may enjoy the relative freedom to plan their own and their children's evenings in their wives' absence on night shifts, but that they also feel their relationship with their wife is "on hold" during night work. Additionally, the same impact of night work may be experienced positively, negatively and indeed neutrally by the same individual. For example, several children indicate that they enjoy the freedom of being able to choose activities in the evening and that they go to bed later when their mother is working a night shift. However, alongside their enjoyment of the freedom of this very "cold spot" they feel slightly disconcerted by the lack of structure and expectations about routine and

bedtimes in their mother's absence, and the next day may regret having had less sleep due to a later bedtime. It is also important to note that some impacts of night work and especially impacts on nurses' sleep, mood and digestion can only be interpreted as negative. However, perhaps the most interesting facet of this complex mix of factors and opinions in experiencing the impacts of night work is that alongside impacts identified as positive or negative, the majority of nurses, husbands and children identify a neutral sense of acceptance and familiarity as their overall stance on night work. In the context of normative gendered expectations, this overall neutrality alongside different impacts suggests resonance with the work of Oakley (1974b) concerning dissonance between feelings about housework and orientations to gendered concepts of self-identity. So while nurses may experience as negative both the physical impacts of night work and the additional tension and stress arising from demands of moderating night work for their husbands and children, nurses may feel neutrally about night work overall as part of their acceptance of the importance of being a "good mother" within their gendered self-identity. The neutral position adopted by the great majority of participants in the context of both positive and negative experiences of night work suggests that alongside particular experiences there may be a shared family orientation to night work as neutral. Such a shared understanding of night work within families might facilitate appreciation about the different ways in which night work may have influences for different people; while also affirming the value of nurses' paid employment.

9.10 CONCLUSIONS – WOMEN'S NIGHT WORK, FAMILY LIVES, EXPECTATIONS AND RESPONSIBILITIES

This chapter has discussed the findings of this study, drawing together accounts and data collected by nurses, husbands and children to consider how night work has influences for whole families, and drawing on sociological literature concerning families, gendered expectations and paid and unpaid work to discuss and further interpret these findings.

The findings discussed in this chapter are now summarised here before the final chapter of this thesis which considers the contribution both to sociological and shift work literature.

The three phase temporal structure of preparation, during night work and recovery phases has emerged from participants' accounts and illustrates how night work has influences far

beyond the period of the actual night shift. Within this structure, the additional work carried out by nurses in preparing their families and re-establishing usual patterns of expectations and responsibilities in order to moderate effects of night work for their husbands and children is clearly apparent.

These patterns of gendered expectation and their fulfilment result in nurses experiencing many very hot "hot spots" (Southerton 2003) of activity as they manage and carry out this additional moderating work. By contrast, the primary change during night work for husbands and children is colder "cold spots" as they experience relaxed evenings with reduced structure and expectations of behaviour in nurses' absence on night shifts. Throughout these accounts, the power of normative gendered ideology in reinforcing and structuring the moral importance of women's emotional labour, household tasks, childcare and management of the household is clearly apparent. In its construction as a form of paid employment not usually considered appropriate within normative ideology for women with children, night work appears to create the moral need for women to do additional work both to ensure the night work does not have negative consequences for their husbands and children; and to demonstrate women's commitment to and valuing of their identity as "good mothers."

Throughout these findings, the large impacts of night work on women are clearly apparent: this includes physical effects of their working pattern on their sleep and mood; and the need to maintain as far as possible usual gendered expectations; while also undertaking additional work to moderate effects of night work for their husbands and children.

Chapter 10 - Conclusions

10.1 INTRODUCTION

This chapter draws out the significance of this study, its findings and contribution. Findings have been discussed in the context of existing literature within Chapter 9 and key elements of these findings are summarised in 9.10.

This chapter opens with a summary of the approach of this study, including its aims and key methods. Given the two key areas of knowledge on which this study draws, discussion of the significance of this study and its findings is divided into two sections: first considering what the study contributes to sociological literature, with reference specifically to literature concerning families, gender, paid and unpaid work; while secondly considering the contribution of this study to understanding of night work. The value and challenges of the mixed methods approach of this study are then discussed; before recommendations for future research and policy; and final concluding reflections.

10.2 SUMMARY OF APPROACH

Given the conceptual focus of previous shift work research on "impacts" for individuals, this study has used a mixed methods and primarily inductive research design within a broadly interpretive framework to consider how night work is experienced, understood and organised by contemporary women employed as nurses and their husbands and children. The perspectives and experiences of all family members have been drawn upon to enable understanding of the ways night work affects how families are continually achieved through "doing" of "family practices" (Morgan 1996). Using mixed methods with an inductive focus enables wider consideration of families' experiences through collecting data using different methods and reflecting different areas of experience and then considering relationships between these data. This approach also enables new understanding to develop, while maintaining some conceptual and empirical links with previous research in ways which enable comparison and consideration of this study's findings in relation to other shift work literature.

The research objectives (introduced in 4.1.2) include exploring lived experiences of night work for nurses, husbands, children and whole families by drawing on qualitative accounts and also diary, log and saliva data during night work and other days. More specifically, research objectives involve considering how night work is organised in the context of family lives, how night work is understood and regarded by individuals and families as whole units in relationship, and what this contributes to understanding of gendered expectations and identities within contemporary families.

To facilitate in-depth understanding of families' experiences of night work, a relatively small number of family groups was recruited to the study (20 families; 74 people). Recruitment was achieved through qualified nurses working in NHS hospitals. Participants in each family included a female nurse aged 30-55 years and working rotating shifts including night shifts; her male spouse or partner; and at least one co-resident child aged 8-18 years. Each participant took part in a two week study period which included at least two consecutive night shifts. During this two week period, daily diaries were completed concerning sleep, sleepiness, mood, food and drink and data was also collected concerning activity and hormone levels. Each participant took part in an individual qualitative interview which included reflection on the two week study period and questions about themes emerging from these data. Each couple (nurse and spouse or partner) also took part in a joint qualitative interview before the two week study period commenced.

Analysis followed an iterative approach, broadly following the principles of grounded theory (Glaser and Strauss 1967) and Moran-Ellis and colleagues' (2006b) approach to "following a thread" conceptually between data collected by different methods. Analysis focused initially on themes emerging from qualitative interview and audio sleep diary data. Within these data, comparisons were made between individuals and groups of participants as themes emerged. Together with initial results of sleep log, mood scale and saliva data analyses, these themes then informed the approach taken to further analyse sleep log, mood scale and saliva data, with the results of these analyses contributing to further analysis of qualitative data.

10.3 SIGNIFICANCE OF FINDINGS FOR SOCIOLOGICAL LITERATURE

This section considers what this study contributes to sociological understanding of families, and women's gendered identities and also sociological study of sleep.

The focus on night work has followed the approach of Hislop and Arber (2003a) in providing a "window" onto the ways in which the daily lives of these contemporary families are achieved, and in particular gendered expectations and identities of women as wives and mothers. Accounts of family members, together with daily diary and saliva data show the continued power of normative ideology about gendered expectations of women concerning household management and responsibilities for housework, childcare and the wellbeing of children to the ways in which families' and women's identities are constructed. The importance of these gendered expectations and their fulfilment is demonstrated by how women manage the potential threat which night work poses to their identity as "good mothers" because it breaks with normative expectations about mothers being available to their husbands and children during the night to meet any needs which may arise. To minimise this threat, the accounts of all family members, and particularly those of nurses and their husbands indicate that women not only continue to fulfil usual expectations while also managing physical impacts of night work upon themselves, but take on additional responsibilities to moderate potential effects of night work upon their families and to demonstrate their commitment to their gendered responsibilities for the wellbeing of their families. So in deviating from normative expectations for women's paid employment and in facilitating their fulfilment of responsibilities within their homes and families, the power of this normative gendered ideology results in women exerting themselves even further to demonstrate their care for their families as "good mothers" who always facilitate the continued "doing and being" of their families, even amid the already considerable demands of night work.

This "window" onto families' lives has also provided further understanding of the centrality of gendered expectations of women through important insights into children's perspectives on their care and how fathers in this study care for their children. Children in this study regard their mothers' physical presence and availability to them as important both in constituting "proper family" and in enabling the continued "being" of the family by ensuring that usual

patterns including expectations of them and care for them are consistently maintained. The accounts of all family members indicate that in comparison with mothers, fathers in this study provide less consistency in expectations, with a more relaxed and less structured approach which allows children more independence outside usual expectations, and on other occasions requires children to meet additional expectations to assist fathers in completing all the tasks requested by their wife.

The importance of these gendered expectations of women and their fulfilment is apparent from direct statements about specific tasks and responsibilities across the accounts of nurses, husbands and children and also via assumptions embedded in these accounts and husbands' and children's feelings about the importance of wives' and mothers' presence in constituting "normal family life" and in enabling their husbands and children to play their familiar parts in "being family". The prevalence of these themes both directly and in more nuanced ways across accounts of individual family members; the contrasts which different accounts provide; and the ways in which different accounts facilitate understanding and analysis of accounts from other perspectives all affirm the value of this whole family approach. Beneath these key themes, these very rich data reveal differences within and between families and tensions even within individuals' accounts. For example, within the position of neutral acceptance of night work adopted by the majority of nurses' husbands, there may be relief regarding the relaxation of usual expectations about bedtime in their wife's absence; guilt and/or anxiety about the pressures faced by their night working wife and additional responsibilities in their wife's absence; and frustration or anger towards their wife's employer and her night working pattern as a result of the impacts for their family.

The conclusions discussed above emanate from qualitative accounts which are supported and furthered by audio sleep diary, sleep log, mood scale and saliva data. These additional data collected by other methods enable corroboration of qualitative interview accounts produced during one session and in collaboration with a researcher with data collected about specific activities on a daily basis over a two week period. These additional data were used to help focus questions during qualitative interviews, and later the different data types were analysed separately at first but with reference to themes emerging from other data, thus enabling analysis to "follow a thread" (Moran-Ellis, et al. 2006b) to reach conclusions enhanced by their reflection of data collected through these mixed methods. Using mixed methods including insights from Chronobiology's approach to studying shift work has

enabled the view through the "window" onto these families' lives in the context of night work to be widened and seen more clearly.

This section has discussed the significance of this study in understanding the pervasiveness of gendered expectations of women as wives and mothers within contemporary society, and the centrality and moral importance of these expectations to women's identities and also husbands' and children's understanding and production of "normal family life". The value of drawing on the perspectives and experiences of all family members, using mixed methods and in particular audio sleep diaries has been emphasised through these conclusions. These insights also demonstrate how analysis of night work and its effects can facilitate understanding of the practice of contemporary families and gendered identities in the context of normative gender ideology. This affirms the value of following Presser's (1984; 1986a; 1986b; 1987; 1988; 1990; 1994; 1995b; 1999; 2000; 2003; 2004; 2005; Presser and Cain 1983) example in continuing sociological attention upon shift work and night work specifically.

10.4 SIGNIFICANCE OF FINDINGS FOR SHIFT WORK LITERATURE

This section considers what this study contributes to understanding of shift work and how night work affects women working this pattern, their partners, children and whole families.

This mixed methods study with a primarily inductive research design and a strong focus on qualitative data within a broadly interpretive conceptual framework has provided considerable and detailed new understanding about how night work is experienced and organised within the social contexts of participating women, husbands, children and whole families. Elements of this new understanding are discussed in detail in Chapter 9 and the preceding four analysis chapters.

The key insight for literature concerning shift work is the importance of social contexts in how night work is experienced. The majority of previous studies have focused on "impacts" of night work on individuals without considering the social structures, relationships and social processes within which these shifts are worked. This study's findings demonstrate the importance of gendered expectations and identities and the continued accomplishment of family relationships in these families' experiences of night work and the need for these

pervasive influences to be considered in debates about choice, tolerance and commitment to night work and whether night work is negative or positive.

Central to the new insights from this study is the importance to women of maintaining their gendered identities as "good mothers" by fulfilling all the usual expectations in taking responsibility for housework, childcare and children's wellbeing, and also undertaking additional work to moderate effects of night work upon their husbands and children and to facilitate the continuation of usual "family practices". All these responsibilities are fulfilled by women alongside the physical effects of their night working and day sleeping pattern.

Alongside changes to their sleep and circadian system, the accounts of all family members and diary and saliva data indicate that the responsibilities assumed by women result in effects of night work within these families extending before and after night shifts as women prepare the household and their families for their absence and then recover and re-establish usual patterns afterwards. The preparation, during night shifts and recovery phases all have specific characteristics.

The preparation phase may cover several weeks in organising shifts, childcare and other arrangements, culminating in a tense couple of days as women undertake additional preparatory housework while anticipating night shifts. Evenings before night work may be particularly busy as the already busy early evening phase coincides with nurses' preparation for night shifts and final arrangements as they prepare husbands and children for their absence from home overnight.

In contrast with the focus within shift work literature on negative effects of lack of shared time together, the period of the actual night shift appears to be less problematic for all family members than the preparatory and recovery phases. In women's absence overnight, husbands and children report that they may enjoy more relaxed evenings or very cold "cold spots" (see Southerton 2003) without the usual structures and expectations about completing activities and bedtime, resulting in later bedtimes (of up to 30 minutes) and teenagers feeling significantly more calm and less tense than when their mother is present in the evening. The following morning, husbands and children may experience a very busy period or very hot "hot spots" (see Southerton 2003) as they complete tasks expected of them before women return from night shifts, while also preparing for work and school. Sleep

diaries indicate that women's day sleep after nights (mean 4 hours 46 minutes) is significantly shorter (by mean 2 hours 20 minutes) than for night time sleep and is timed to enable them to deliver and collect children from school.

Women's sleep diaries indicate that their sleep is particularly short after their last or only night shift (3 hours 58 minutes), and their interview and audio sleep diary accounts indicate that this enables them to allay the guilt which they feel about sleeping during the day by entering the recovery phase and re-establishing usual expectations and patterns and catching up on housework as soon as possible after night shifts finish. Accounts of all family members reveal that these social and emotional effects of night work continue after night shifts end in a similar manner to the continuing physical effects upon sleep patterns.

Despite many husbands and children enjoying the freedom of evenings without their wives and mothers, both husbands and children are keenly aware of her absence: for husbands this can feel like the relationship is "on hold", while for children the absence of their mother's presence, availability and expectations can feel like their family is temporarily not a "proper family." These accounts concerning the meaning and influences of women's absence for husbands and children affirms the value of a conceptual approach which incorporates understanding of families being constituted through "doing" and "being" together.

The detailed insights which this mixed methods study has provided into experiences of night work for women, husbands and children within these families indicates the value of this approach. These findings have enabled comparison with expected physical impacts of night work based on previous research, while also providing new insights about the differences in how night work is experienced, managed and perceived by women working night shifts and their husbands and children. Hearing the perspectives of these individuals concerning night work's effects suggests the emphasis on night work having exclusively negative effects greatly and misleadingly simplifies the relationships and wider social structures within which night work is experienced and the emotion work and other moderating work which is done by all family members but particularly by women to maintain their identities as "good mothers" and to ensure that their families successfully manage night work.

This section has discussed the significance of this study for literature concerning shift work, and its new insights about the importance of social context and in particular the continual

production of family lives through "doing and being family", gendered expectations and women's identities as "good mothers" in understanding how night work is experienced.

10.5 VALUE OF CONCEPTUAL AND METHODOLOGICAL APPROACH

This study's mixed methods with a primarily inductive research design and interpretive focus has drawn upon different epistemological and conceptual frameworks to develop understanding about how night work's influences are experienced by women working at nurses, and their husbands and children. This section discusses the strengths and limitations of this study's approach.

This epistemological, conceptual and methodological range has been integral to this study from its outset and has enabled clear identification of the limited focus of previous research on "impacts" of night work on individuals and its predominantly physiological and negative emphasis. This approach has also enabled identification of appropriate conceptual frameworks from within sociology to further understanding about the ways in which women's night work is experienced within families.

The participation of whole families has enabled individual voices of women, husbands and children to be heard: this has facilitated understanding about the differences and similarities about the ways night work is experienced and perceived by each group of family members; while providing additional perspectives on experiences of other family members; and contributing to understanding about how night work affects families as integrated wholes and the importance of women facilitating the "doing and being" of family lives in successfully managing night work and its influences.

A large amount of very rich and detailed qualitative, diary and saliva data were generated as part of the study's exploratory and inductive approach to developing understanding of the ways in which night work is experienced and has influences for nurses, their husbands and children. The volume of data collected and the complexity of the study's methodological, conceptual and epistemological frameworks required selective decision-making concerning the analysis and presentation of the findings. As discussed in Chapter 4, data analysis primarily took an iterative approach which drew upon key emergent themes within the scope

of the research objectives. This approach has enabled understanding to develop concerning the dominant patterns within the experiences and perspectives of each group of family members, and also appreciation of the nuances and tensions apparent beneath and within these accounts. However, this strategic focus on dominant themes has not permitted detailed consideration of less common themes and apparently anomalous data to enable deeper and more comprehensive understanding to emerge. While multiple family members and whole families participated in the study, a whole family approach was not followed analytically. It was decided not to undertake detailed case study analysis of each family group and relationships between individuals within each family as it appeared this would not contribute significantly to developing understanding of key themes within the experiences of night work for these women, their husbands and children.

The importance of the perspectives of each group of family members (children, husbands and nurses) is apparent within the structure of the analysis chapters. Despite the focus of this study on employing mixed methods and the conceptual importance of acknowledging impacts of night work on sleep and the body alongside influences on families and social relationships, several factors supported the value of dedicating separate chapters to the perspectives of children, husbands and nurses, and physiologically focused data concerning impacts of night work on sleep and mood. Given the dominance of physiological impacts within existing night work literature, the need to provide methodological details alongside data and the importance of direct comparisons between family members and stages of night work it was decided to discuss analysis of sleep and mood data together in Chapter 8. The limited previous consideration of night workers' and their families' experiences and perspectives concerning night work, the importance of valuing the voices of children and husbands alongside nurses and the insightful differences between accounts all affirmed the importance of Chapters 5, 6 and 7 separately discussing the perspectives of children, husbands and nurses by drawing primarily on qualitative data and then acknowledging how these accounts are supported and enhanced by the more physiologically focused data.

The inclusion of semi-structured interviews constructed through social interaction with the researcher; audio sleep diaries constructed by the participant; self-completion logs and scales with pre-defined categories; and activity and saliva data involves a wide range of methodologies. Collection and analysis of these data together enabled much wider understanding to develop than would have been possible with each data type individually. Inclusion of methodologies normally associated with a more positivist epistemological

approach have enabled comparisons with other studies and confirmation that the expected effects on nurses' sleep patterns, sleepiness, mood and cortisol levels were observed. The qualitative data which were the primary focus were supported and furthered by the self-completion sleep log and mood scale and saliva data, clarifying and affirming key themes and presenting opportunities for further analysis.

This study's focus on collecting a wide range of detailed data from whole families has necessitated a self-selecting and relatively small sample size of twenty families (74 people). While most previous research concerning shift work has aimed to include representative samples so that generalisations can be made across the whole shift working population, the findings of this study are focused upon families where the nurse was open to participation and families where night work is successfully managed. This approach has created homogeneity in the sample in two respects. Firstly, in recruiting only women qualified as nurses, this study enables consideration of the extent to which gendered expectations concerning responsibility for the wellbeing of their family have influences upon the paid employment of women who have invested considerable personal resources in attaining professional qualifications and in sustaining a career which may be emotionally demanding. Secondly, in recruiting only families successfully managing night work and with sufficient capacity and willingness to sustain the additional demands of participating in the research, it is likely that this study provides insights about the most successful ways in which night work is managed within families.

Participant recruitment, interviews and other data collection were conducted and coordinated by the author, a female researcher with no personal experience of nursing and younger than all of the participating women and husbands. The process of recruitment, explaining the study and gaining informed consent of participants all provided opportunities for the researcher to build rapport with the participating family members. The combination of this rapport and collecting multiple types of data over two weeks resulted in some candid accounts which hopefully reflect participants' understanding of the project and confidence in the way their data would be used. The lack of personal experience of nursing permitted many questions to be asked in the role of a relative outsider. However, given the author's gender, the focus of the study on nursing night shifts and contact with the participating family being with the nurse initially, it is possible that some husbands and children may have regarded the author as valuing the opinions of nurses more highly than other family members. Efforts were made to reduce the possibility of these concerns arising, with all

participants being told at all stages of the importance of all family members' participation, and with reassurances about confidentiality within families. While efforts were also made to explain the study's exploratory stance, the value of experiences and perspectives, its focus on social relationships and the importance of each type of data collected, it is possible that the daily data collection over two weeks in contrast with just one or two qualitative interviews may have resulted in some participants regarding sleep, eating and mood as of greater importance within the study than their own perspectives.

The preceding analysis and discussion chapters clearly illustrate that the mixed methods approach of this study and its reference to multiple epistemological and conceptual approaches have provided detailed and wide-ranging insights into the ways night work influences the lives of women working at nurses, and their husbands and children. This has included data covering both physiological impacts of night work and influences upon family relationships and patterns of expectation and responsibility. In "following the thread" (Moran-Ellis, et al. 2006b) thematically between different types of data through the analysis process, it is clear that the different data support each other substantively and also enable development of further analytical threads.

A key aspect of this study's design was the opportunity to develop understanding about experiences of night work and its influences on social relationships within the context of existing knowledge about night work's physiological impacts. Developing understanding about how gendered expectations and family relationships may influence and be affected by changes in sleep and mood in the context of night work was central within the study design. The mixed methodological, conceptual and epistemological approach of this study was also designed to provide opportunities to introduce new insights to debates by drawing on existing methodological, conceptual and epistemological approaches alongside other approaches. For example, this study's findings provide opportunities to contribute to the physiologically focused shift work literature new insights emanating from recognised methods concerning sleep duration, mood and cortisol levels of night working nurses and their husbands and children, while also drawing on qualitative data and sociological theory to provide family members' perspectives and insights concerning the gendered expectations and family relationships structuring these experiences of night work. It is unlikely that a paper with exclusively qualitative data and sociological theory would be published or engaged with within this literature, so the inclusion of familiar and accepted methodological, conceptual and epistemological material alongside these perspectives from the same

participants is essential in achieving recognition and engagement within the appropriate substantive literature.

While this integrated approach has several benefits, it is important also to recognise the challenges within this study's approach. Although this study involved both sociological and physiologically focused approaches from the shift work literature from its outset, it cannot be considered at the level of fully integrated methods as Moran-Ellis and colleagues (2006a: 51) suggest. While the study design was developed with reference to both sociological and shift work literature, multiple types of data were collected with the same participants, some of the analysis thematically drew on mixed methods data collection and the findings are presented and discussed with reference to the mixed methods, there remain important conceptual and epistemological distinctions. Given the importance of using robust methodology and contributed to established bodies of literature, the methods employed and analysis of the data had to be conducted according to recognised methods and interpreted in the context of existing literature. It has been argued in Chapter 4 that the significance of some distinctions between qualitative and quantitative and also between inductive and deductive approaches are sometimes exaggerated and that epistemology is not necessarily tied to method. Within this study, the different methods have been employed because of their potential for enhancing understanding of different aspects of night work, but also because of their recognition in relation to particular conceptual areas and epistemological spheres. However, there are some inconsistencies and incompatibilities which have not been resolved conceptually within this broadly interpretive, inductive and exploratory approach which also acknowledges the biological physicality of sleep and circadian rhythms. In particular, inductivism indicates openness to other perspectives, but only where these approaches also include some degree of relativism in a way which is not acknowledged within biomedical sciences. This suggests that while the openness to alternative interpretations within an inductive perspective should enable consideration of biological physicality, this is hampered by the objectivist stance of biomedical science. These ontological differences present a barrier which threatens to perpetuate a dualist stance epistemologically which does not recognise the interdependence of what is conceptualised as biological and social life. While interdisciplinary and mixed methods research is now frequently carried out, discussion of the "methodological and theoretical underpinnings" (Mason 2006: 10) is relatively rare. Additionally, this literature usually considers such combined approaches only within the social sciences rather than in ways which go beyond epistemological differences to engage with the ontological implications of interdisciplinary research involving natural sciences and

their objectivist focus on physicality. For example, Shilling (2003) discusses the possibility of transcending dualism through ontology respectful of dynamic relationships by regarding the body as "...an unfinished biological and social phenomenon which is transformed, within certain limits, as a result of its entry into, and participation in, society" (p.11) and by drawing on Connell (1987) and Freund (1982) to reach an epistemology which transcends constructionist and naturalistic divisions as "...a corporeal phenomenon which is not only affected by social systems, but which forms a basis for and shapes social relations" (Shilling 2003: 88). While this might form a starting point for the development of an epistemological framework in which inductive approaches can be combined with objectivist approaches of biomedical sciences, it seems likely that this transformational perspective would be hampered by the need directly to engage objectively oriented biomedical scientific approaches with relativist ontology.

This section has discussed the strengths of the study in drawing on a wide range of epistemological, conceptual and methodological frameworks to develop detailed understanding about how night work has influences for and is successfully managed by these families. It has considered how this study focused on developing wide-ranging understanding of key themes for each group of family members rather focusing on depth by analysing patterns within specific families. The section has also considered how rapport was developed between the researcher and participants, the possibility that participants may have perceived a focus on nurses' experiences; and the lack of unifying conceptual framework enabling inductively and positivist-focused methodologies to be employed together.

10.6 RECOMMENDATIONS FOR FUTURE RESEARCH

The exploratory approach of this study means that many possibilities present themselves for developing understanding of night work's influences on lives beyond paid employment and for further understanding how contemporary family lives are organised and experienced and the extent of normative gendered ideology. Just a small number of recommendations for conceptual development and methodology follow.

With the focus of this study on those families who are coping with and accepting of night work, it seems important to develop understanding about how these positions are developed

and maintained. It is clear that participants in this study were both coping with night work as part of a rotating shift pattern and therefore can be described as within the shift work "survivor" group (Harrington 2001); and were also willing to share their experiences of night work from across their families with a researcher. It is possible that in other families which did not offer to participate, coping with night work may take even greater efforts than those described within this thesis. Given the power of normative gender ideology discussed here, it may be insightful to explore these orientations to understand how coping is achieved or not achieved within the "doing" and "being" of family lives.

Additionally, a longitudinal study exploring expectations of night work before commencing this working pattern, experiences of night work and decision-making and perspectives around and after ceasing night work may provide further insights about how coping is achieved. This research could also evaluate whether training and awareness-raising concerning night work and its effects for employees and their families (as suggested by some participants) could effectively enable alleviation of potential risks to relationships by all family members.

While this study has enabled detailed focus on gendered expectations and identities of women working at night, little is known about how men's night work is organised within contemporary families. A previous study conducted twenty years ago suggests that women organise children's lives to fit with fathers' working patterns and to protect their sleep opportunities (Hertz and Charlton 1989). How is men's night work organised in terms of specific tasks and emotion work within daily lives in the contemporary context of many women also being in paid employment?

This study demonstrates the value of drawing on the perspective and experiences of all family members and this could benefit further understanding in future research concerning shift work; and also further development of sociological understanding about the ways families work together.

Audio sleep diaries have provided detailed understanding of all family members' experiences of night work. In particular, the nurses appeared comfortable recording with great honesty how they were feeling throughout their period of night work and during the preparatory and recovery phases. The time of the recording, the words recorded and the tone of voice used

all provided important and personal insights into these experiences in ways which are not possible with an interview which is designed to provide an overview of experiences and where accounts may be influenced by the researcher's presence and the social construction of the interview as social interaction between participant and researcher. This method has been employed previously within sociological research concerning women's sleep and heterosexual couples' sleep (Hislop and Arber 2003c; Hislop, et al. 2005; Meadows, et al. 2005; Venn, et al. 2008) and it seems it could be employed very fruitfully within future studies exploring physical and emotional experiences of night work or areas of social life in which feelings may change across short periods of time or where it may be difficult to recall or to speak frankly about experiences in a researcher's presence.

10.7 FINAL CONCLUDING REFLECTIONS

Since identifying the substantive gap in knowledge about social influences and contexts of night work, closer scrutiny of this literature identified conceptual limitations within the individually focused understanding about negative "impacts" of night work for wellbeing and couple relationships.

The limited conceptual and methodological focus of previous studies clearly identified the need for inductive and primarily qualitative research to explore in detail how night work is experienced, the meanings which this pattern holds for women, their husbands and children and the social structures which underlie and give meaning to these experiences.

This study has widened understanding about how night work is experienced and how gendered expectations and the "doing and being" of family relationships structure these experiences by opening up night work to new substantive and conceptual considerations.

The large amount of mixed methods data gathered with 74 people in 20 families has enabled detailed exploration of these experiences and influences and the emergence of key themes in the experiences of nurses, their husbands and children and in consequences of night work for whole families. Interpreting these accounts which are supported by sleep log, mood scale and saliva data has also demonstrated the power of normative gendered ideology within contemporary families and the importance accorded to women maintaining gendered identities as "good mothers" as an integral part of successfully "being family." The

pervasiveness of these normative values is illustrated by the considerable efforts expended by women in the context of already physically demanding night work to protect their identities and their families from the potential threat night work poses to their moral identity as "good mothers."

Appendix 1 - Example letter to potential participant recruiter

<University of Surrey headed paper>

<Date>

Name and address of senior staff/line manager

Sleep, social roles and relationships of nurses who work at night

Dear <contact>,

I would be very grateful for your help in my research concerning the experiences of nurses who work at night, their spouses/partners and children. This study is being conducted as part of my doctoral research at the University of Surrey. I am interested in how nurses' working and sleeping patterns during night work may affect and may be affected by their spouse/partner and children.

I would very much appreciate your assistance in helping me to recruit nurses to participate in this research. I am looking for 20 qualified nurses of any grade aged between 30 and 55 years and working on an internal rotation pattern which includes at least 3 consecutive night shifts. I aim to recruit 10 female nurses and 10 male nurses who live with a spouse/partner of the opposite sex and co-resident children aged 8-18 years.

Nurses' spouses/partners and children will be recruited to the study via the nurses. Taking part in the research will involve 2 questionnaires, 2 interviews lasting 30-90 minutes each, and a 2 week period of daily data collection. The 2 week period of daily data collection includes continual monitoring of activity using an Actiwatch (a non-invasive watch-like device which records movement), up to 20 minutes each day completing diaries and questionnaires, and providing 2 saliva samples each day. All of this data will be collected in participants' own homes.

As compensation for their time and inconvenience, incentive payments will be offered: this will be £150 per family including a couple and at least 1 co-resident child aged 8-18 years, with pro rata payments if participants withdraw from the study.

This study has received a favourable opinion from Surrey NHS Research Ethics Committee and the University of Surrey Ethics Committee, and is being conducted in strict accordance with the Data Protection Act 1998 and the British Sociological Association's Code of Ethics (2002). Participants' confidentiality will be strictly protected at all times, participants will be free to withdraw at any point without giving a reason, and written informed consent will be obtained from every participant.

Please contact me if you would like any further details. I enclose recruitment advertisements and potential participant packs including information sheets, background questionnaires, stamped addressed envelopes, and my contact details. I would be very grateful if you could distribute these to nurses who fulfil the above criteria.

Many thanks for your time in reading this and for your help.
Yours sincerely,

Elizabeth Thompson, Department of Sociology, University of Surrey, Guildford GU2 7XH
01483 876983 e.thompson@surrey.ac.uk

Supervisors: Professor Sara Arber 01483 686973 s.arber@surrey.ac.uk
Professor Debra Skene 01483 689706 d.skene@surrey.ac.uk

Appendix 2 – Recruitment advertisement

HELP US BY WORKING AT NIGHT

Are you a qualified nurse aged 30-55?

Working full time and doing a mixture of day and night shifts?

Married or living with a partner of the opposite sex?

Have one or more children aged 8-18 years living with you?

Research is being conducted at the University of Surrey concerning experiences of both female and male nurses who work at night, together with their spouses/partners and children aged 8-18 years. The study aims to increase understanding of the ways nurses' night working and sleeping patterns may affect and may be affected by their spouses/partners and children.

The study uses interviews, questionnaires, logs concerning sleep, food, drink, and mood, audio sleep diaries, saliva samples, and Actiwatches (small watch-like devices which measure activity and sleep related movement), all of which can be conducted at home. These methods will allow you to give your perspectives on your work, sleep and relationships, as well as enabling us to examine whether physical factors affect your sleep.

This study has been approved by Surrey NHS Research Ethics Committee and the University of Surrey Ethics Committee, and all data will be highly confidential. Each family (a couple and at least one participating child aged 8-18 years) will receive £150.

If you are interested in participating in this research or would like further information, please contact **Elizabeth Thompson** at:

Department of Sociology
University of Surrey, Guildford, GU2 7XH
e.thompson@surrey.ac.uk

Tel: 01483 876983

Appendix 3 – Potential participant pack

The potential participant pack was sent to nurses who had many an enquiry about participating in the study. Each pack included:

- An introductory letter (Appendix 3.1) briefly outlining what their family's participation in the research would involve
- The diagram of the participation process (Appendix 3.2)
- An information sheet for the nurse (Appendix 3.3) and her husband/partner (Appendix 3.4)
- Copies of the information sheet for each child. Copies of the version for older children (Appendix 3.5) and young children (Appendix 3.6) were supplied depending on information provided. See 4.6.2 for further details and discussion.
- A copy of the background questionnaire (Appendix 3.7) for completion if all family members wish to participate
- A stamped addressed envelope to return the completed background questionnaire
- A compliments slip with a handwritten message thanking the nurse for their enquiry and encouraging them to make contact if any further questions arise.

Appendix 3.1 – Introductory letter to nurse

<University of Surrey headed paper>

<Date>

Sleep, social roles and relationships of nurses who work at night

Dear <Nurse>,

I am conducting a study into the experiences of nurses who work at night, and the experiences of their spouse/partner and children aged 8-18 years. The study is part of my doctoral research at the University of Surrey. I would be very grateful if you could consider participation in the study.

Participating in the research will involve completing 4 questionnaires and 2 interviews, as well as participating in a 2 week period of daily data collection which will be planned to include a period of night duties. During these 2 weeks, you, your spouse/partner and children aged 8-18 years will be asked to wear a watch-like device which monitors your movements, and you will also be asked to spend up to 20 minutes each day completing an audio sleep diary, food, drink, sleep and mood logs and giving 2 saliva samples.

For your time and inconvenience, as a family, you will be offered an incentive payment of £150, with pro rata payments if you withdraw from the study early.

I enclose an information sheet for you, as well as separate information sheets for your spouse/partner and two sheets for children aged between 8-18 years. One sheet is intended for children aged 8-11 years and the other for children aged 12 years and above, but you and your child should choose the most suitable sheet for the child. If you and your spouse/partner and child(ren) are interested in participating, please complete the enclosed background questionnaire and return it to me in the stamped address envelope.

Thank you for taking the time to read this information. Please contact me if you would like any further information. I look forward to hearing from you soon.

Elizabeth Thompson
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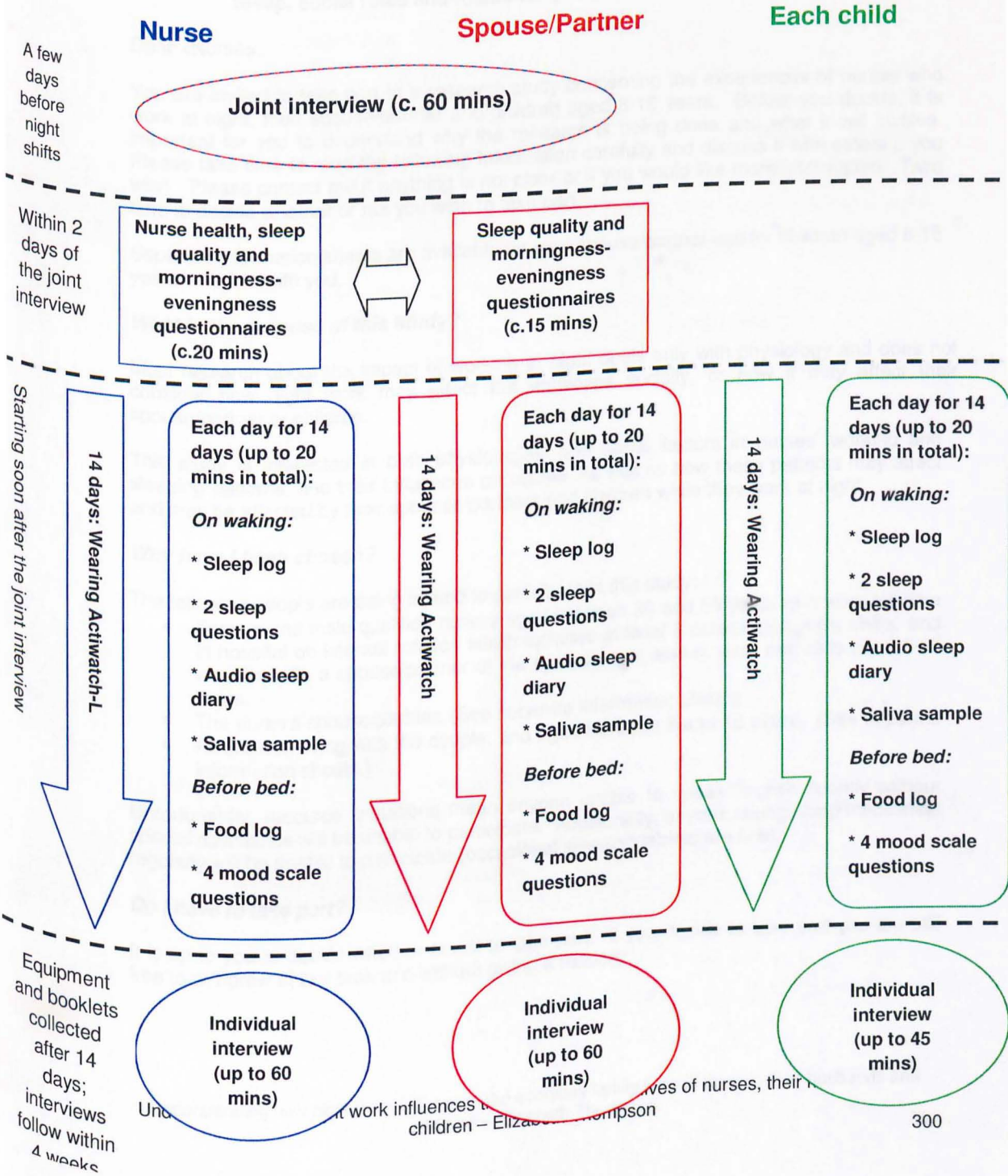
Supervisors:
Professor Sara Arber 01483 686973 s.arber@surrey.ac.uk
Professor Debra Skene 01483 689706 d.skene@surrey.ac.uk

3.2 - Diagram of participation process

Sleep, social roles and relationships of nurses who work at night

What's involved in taking part?



3.3 – Nurse's information sheet

<University of Surrey headed paper>

<Date>

Sleep, social roles and relationships of nurses who work at night

Dear <Nurse>,

You are invited to take part in a research study concerning the experiences of nurses who work at night, their spouse/partner and children aged 8-18 years. Before you decide, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Please contact me if anything is not clear or if you would like more information. Take time to decide whether or not you wish to take part.

Separate information sheets are available for your spouse/partner and for children aged 8-18 years who live with you.

What is the purpose of this study?

Most research about the impact of working at night deals only with physiology and does not consider how night work may affect the employee socially, or how it may affect their spouse/partner or children.

This study is interested in both physiological and social factors in nurses' working and sleeping patterns, and their influences on nurses, as well as how these patterns may affect and may be affected by their spouses/partners and children while they work at night.

Why have I been chosen?

The following people are being invited to participate in this study:

- Female and male qualified nurses aged between 30 and 55 years who work full time in hospital on internal rotation which includes at least 3 consecutive night shifts, and who live with a spouse/partner of the opposite sex, and at least one child aged 8-18 years.
- The nurse's spouse/partner. (See separate information sheet.)
- All children living with the couple, and aged between 8 and 18 years. (See separate information sheets.)

Unfortunately, resource limitations mean anyone unable to speak English fluently without special assistance will be unable to participate. Additionally, anyone taking sleep medication regularly will be unable to participate (occasional sleeping tablets are fine).

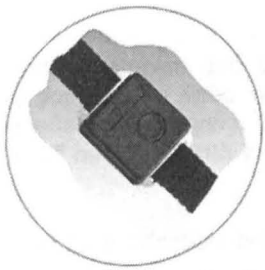
Do I have to take part?

It is up to you to decide whether or not to take part. If you decide to take part you are still free to withdraw at any time and without giving a reason.

What will happen to me if I take part?

If you agree to take part you will be asked to participate in the following:

- An initial joint tape-recorded interview with your spouse/partner lasting 30-90 minutes.
- Completion of three short questionnaires: one about your general sleep quality; one about how you feel at different times of day and night; and one designed to ask shift workers about physical and general health.
- Daily data collection for 2 weeks including at least 3 consecutive night shifts, involving:
    - Wearing an Actiwatch-L (see picture below) to monitor your activity and light exposure for the whole 2 week period. This is not intrusive, and very similar to wearing an extra watch outside your sleeves.
    - Spending up to 20 minutes in total each day completing an audio sleep diary into a Dictaphone, an outline log of your sleep, food and drink, and simple sleep quality, sleepiness and mood scales.
    - Giving 2 saliva samples each day. You can do this yourself by spitting into a tube, which you will be asked to label and store in your home freezer. These samples will provide an indicator of your biological clock, via analysis of the hormones cortisol and melatonin.
- A final tape-recorded interview on your own, lasting 30-90 minutes. This will be arranged for 1-4 weeks after the 2 week daily data collection period.



Source: Cambridge Neurotechnology website

In total, you will be involved in the research for 3-7 weeks. None of this will require you to attend a laboratory or the University, and all of it can be conducted in your own home. Apart from being involved in the data collection listed above, there are no restrictions on your normal routine or lifestyle. There will be no medical benefit or medical risk from participating in this study.

The enclosed information sheets for your spouse/partner and children tell them what they will be asked to do if they agree to participate. This is identical to what will be asked of you, except that they will not be asked to complete the health questionnaire, their Actiwatches will only record movement and not light exposure, and children will only be asked to participate in one interview rather than two interviews, and will not be asked to complete the questionnaires concerning general sleep quality and how they feel at different times of day and night.

What type of questions will I be asked in the interviews?

Both interviews are designed to be free flowing and the type of questions asked will to some extent depend on how the interviews develop.

For the first interview with yourself and your spouse/partner, topics will include general opinions and experiences concerning your sleep, general health, night work, household routines and relationships. This may include questions about your responses to the questionnaires about general sleep quality and how you feel at different times of day and night.

The final interview on your own will be more focused on the 2 week period of daily data collection which has preceded it. Topics will include your daily routines, opinions and feelings during the periods of day work and night work with particular attention to sleeping and eating patterns, completion of household tasks, your work, and relationships within your couple and/or family. You may be asked to elaborate on your responses to written questionnaires during the study. There will be opportunity for you to reflect on participating in the research and any changes this may have had on your experience of night work.

Your spouse/partner and children will be asked similar questions in their interviews. For younger children, questions using age appropriate language and concepts have been developed with an experienced primary school teacher and primary school aged children. I am asking to interview children on their own because I am interested in their experiences and views. However, if you or your child are uncomfortable about them being interviewed alone, it is possible for siblings to be interviewed together, or for a sibling, friend, yourself or your spouse/partner to be present.

Will my taking part in this study be kept confidential? What will happen to the study results?

Everything you say or write, the saliva samples and actigraphic data will remain strictly confidential. In particular, nothing you say or write will be repeated or shown to your spouse/partner, any children or colleagues or employers. Questionnaires, diaries, logs, scales, saliva samples and actigraphic data will be coded with a number, and your name will not be disclosed at any stage.

The results from this study may be used for publication, but pseudonyms and anonymous data will be used.

Will I be compensated for my time?

For your time and inconvenience, as a family, you will be offered £150 per family, with pro rata payments if you withdraw from the study early.

Can I withdraw at any time?

You are free to withdraw from the study at any time without prejudice, and you do not have to give a reason for your withdrawal. Pro rata payments will be given if you withdraw from the study early. Information and data from participants who have withdrawn from the study will only be used if this is expressly permitted.

Who is conducting this research and who can I contact for further information?

This research is being conducted by Elizabeth Thompson, a doctoral research student who is funded by the University of Surrey, and the research is being supervised by Professor Sara Arber and Professor Debra Skene from the University of Surrey. Visits to participants' homes will be conducted by Elizabeth Thompson, and for some visits, an additional researcher from the University of Surrey. Where two researchers visit, both researchers will be involved in

explaining the research process and for the joint couple interview, both researchers will be involved in conducting the interview. The second researcher may also conduct the individual interview with the nurse's spouse/partner.

If you require any further information concerning this study please contact Elizabeth Thompson (01483 876983 e.thompson@surrey.ac.uk), or her supervisors Professor Sara Arber (01483 686973 s.arber@surrey.ac.uk) and Professor Debra Skene (01483 689706 d.skene@surrey.ac.uk).

Who has reviewed the study?

The study and this information have been approved by South West Surrey NHS Local Ethics Committee and the University of Surrey Ethics Committee. The main researcher, Elizabeth Thompson, has also obtained clearance through an enhanced disclosure from the Criminal Records Bureau.

I'm interested in taking part. What should I do now?

If you think you, your spouse/partner and at least one of your children aged 8-18 years might be interested in taking part in this research, please could one of you complete the attached questionnaire and return it to me in the stamped addressed envelope? This does not in any way commit you to taking part in the research.

Thank you for taking the time to read this information. If you would like any further information before making a decision, please contact me. I look forward to hearing from you soon.

Elizabeth Thompson
Department of Sociology, University of Surrey
Guildford GU2 7XH
01483 876983 e.thompson@surrey.ac.uk

3.4 - Partner's information sheet

<University of Surrey headed paper>

<Date>

Sleep, social roles and relationships of nurses who work at night: information for nurses' spouses/partners

You are invited to take part in a research study concerning the experiences of nurses who work at night, their spouse/partner and children aged 8-18 years. Before you decide, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Please contact me if anything is not clear or if you would like more information. Take time to decide whether or not you wish to take part.

Separate information sheets are available for your spouse/partner and for children aged 8-18 years who live with you.

What is the purpose of this study?

Most research about the impact of working at night deals only with physiology and does not consider how night work may affect the employee socially, or how it may affect their spouse/partner and children.

This study is interested in both physiological and social factors in nurses' working and sleeping patterns, and their influences on nurses, as well as how these patterns may affect and may be affected by their spouses/partners and children while they work at night.

Why have I been chosen?

The following people are being invited to participate in this study:

- Female and male qualified nurses aged between 30 and 55 years who work full time in hospital on internal rotation which includes at least 3 consecutive night shifts, and who live with a spouse/partner of the opposite sex.
- The nurse's spouse/partner.
- All children living with the couple, and aged between 8 and 18 years. (See separate information sheets.)

Altogether, just over 60 people will be participating in the research. This will include 20 nurses, 20 spouses/partners, and at least 20 children aged 8-18 years.

Unfortunately, resource limitations mean that anyone unable to speak English fluently without special assistance will not be able to take part. Additionally, anyone taking sleep medication regularly will not be able to take part (occasionally taking sleeping tablets is fine).

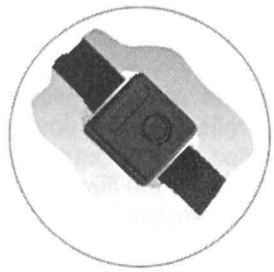
Do I have to take part?

It is up to you to decide whether or not to take part. If you decide to take part you are still free to withdraw at any time and without giving a reason.

What will happen to me if I take part?

If you agree to take part you will be asked to participate in the following:

- An initial joint tape-recorded interview with your spouse/partner lasting 30-90 minutes.
- Completion of two short questionnaires: one about your general sleep quality; and one about how you feel at different times of day and night.
- Daily data collection for 2 weeks, which will include a period when your spouse/partner works at least 3 consecutive night shifts. For you, this will involve:
    - Wearing an Actiwatch (see picture below) to monitor your activity for the whole 2 week period. This is not intrusive, and very similar to wearing an extra watch.
    - Spending up to 20 minutes in total each day completing an audio sleep diary into a Dictaphone, an outline log of your sleep, food and drink, and simple sleep quality, sleepiness and mood scales.
    - Giving 2 saliva samples each day. You can do this yourself by spitting into a tube, which you will be asked to label and store in your home freezer. These samples will provide an indicator of your biological clock, via analysis of the hormones cortisol and melatonin.
- A final tape-recorded interview on your own, lasting 30-90 minutes. This will be arranged for 1-4 weeks after the 2 week daily data collection period.



Source: Cambridge Neurotechnology website

In total, you will be involved in the research for 3-7 weeks. None of this will require you to attend a laboratory or the University, and all of it can be conducted in your own home. Apart from being involved in the data collection listed above, there are no restrictions on your normal routine or lifestyle. There will be no medical benefit or medical risk from participating in this study.

Separate information sheets for your spouse/partner and children aged 8-18 years tell them what they will be asked to do if they agree to participate. This is identical to what will be asked of you, except that your spouse/partner will be asked to complete a background questionnaire and a health questionnaire, and their Actiwatches will also record light exposure; and children will only be asked to participate in one interview rather than two interviews, and will not be asked to complete the questionnaires concerning general sleep quality and how they feel at different times of day and night.

What type of questions will I be asked in the interviews?

Both interviews are designed to be free flowing and the type of questions asked will to some extent depend on how the interviews develop.

For the first interview with yourself and your spouse/partner, topics will include general opinions and experiences concerning your sleep, general health, night work, household routines and relationships. This may include questions about your responses to the questionnaires about general sleep quality and how you feel at different times of day and night.

The final interview on your own will be more focused on the 2 week period of daily data collection which has preceded it. Topics will include your daily routines, opinions and feelings during the periods of your spouse/partner's day work and night work with particular attention to sleeping and eating patterns, completion of household tasks, your work, and relationships within your couple and family. You may be asked to elaborate on your responses to written questionnaires during the study. There will be opportunity for you to reflect on participating in the research and any changes this may have had on your experience of your spouse/partner's night work.

Your spouse/partner and children will be asked similar questions in their interviews. For younger children, questions using age appropriate language and concepts have been developed with an experienced primary school teacher and primary school aged children. I am asking to interview children on their own because I am interested in their experiences and views. However, if you or your child are uncomfortable about them being interviewed alone, it is possible for siblings to be interviewed together, or for a sibling, friend, yourself or your spouse/partner to be present.

Will my taking part in this study be kept confidential? What will happen to the study results?

Everything you say or write, the saliva samples and actigraphic data will remain strictly confidential. In particular, nothing you say or write will be repeated or shown to your spouse/partner or children. Questionnaires, diaries, saliva samples and actigraphic data will be coded with a number, and your name will not be disclosed at any stage. The results from this study may be used for publication, but pseudonyms and anonymous data will be used.

Will I be compensated for my time?

For your time and inconvenience, as family, you will be given £150, with pro rata payments if you withdraw from the study early.

Can I withdraw at any time?

You are free to withdraw from the study at any time without prejudice, and you do not have to give a reason for your withdrawal. Pro rata payments will be given if you withdraw from the study early. Information and data from participants who have withdrawn from the study will only be used if this is expressly permitted.

Who is conducting this research and who can I contact for further information?

This research is being conducted by Elizabeth Thompson, a doctoral research student who is funded by the University of Surrey, and the research is being supervised by Professor Sara Arber and Professor Debra Skene from the University of Surrey. Visits to participants' homes will be conducted by Elizabeth Thompson, and for some visits, an additional researcher from the University of Surrey. Where two researchers visit, both researchers will be involved in explaining the research process and for the joint couple interview, both researchers will be

involved in conducting the interview. The second researcher may also conduct the individual interview with the nurse's spouse/partner.

If you require any further information concerning this study please contact Elizabeth Thompson (01483 876983 e.thompson@surrey.ac.uk), or her supervisors Professor Sara Arber (01483 686973 s.arber@surrey.ac.uk) and Professor Debra Skene (01483 689706 d.skene@surrey.ac.uk).

Who has reviewed the study?

The study and this information have been approved by Surrey NHS Research Ethics Committee and the University of Surrey Ethics Committee. The main researcher, Elizabeth Thompson has also obtained clearance through an enhanced disclosure from the Criminal Records Bureau.

I'm interested in taking part. What should I do now?

If you think you, your spouse/partner and at least one of your children aged 8-18 years might be interested in taking part in this research, please could your spouse/partner complete the attached background questionnaire and return it to me in the stamped addressed envelope? This does not in any way commit you to taking part in the research.

Thank you for taking the time to read this information. If you would like any further information before making a decision, please contact me. I look forward to hearing from you soon.

Elizabeth Thompson
Department of Sociology
University of Surrey
Guildford GU2 7XH
01483 876983
e.thompson@surrey.ac.uk

3.5 - Older child's information sheet

<University of Surrey headed paper>

<Date>

Sleep, social roles and relationships of nurses who work at night: information for older children

You are invited to take part in research about the experiences of nurses who work at night, and their families. Before you decide, it is important that you understand why the research is being done and what it will involve. Please read the following information carefully and discuss it with other people if you wish. Please contact me if anything is not clear or if you would like more information. Take time to decide whether or not you wish to take part.

What is the purpose of this study?

Most research about working at night deals only with health and doesn't consider how working at night may affect the person's family. This study is interested in nurses' working and sleeping patterns, and their effects for nurses and their families.

Why have I been chosen?

The research aims to find out about children aged between 8 and 18 years who live with a nurse who works at night.

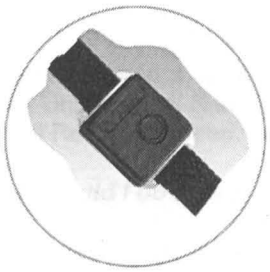
Do I have to take part?

It is up to you to decide whether or not to take part. If you decide to take part you are still free to change your mind, and stop taking part at any time, and without giving a reason.

What will happen to me if I take part?

If you agree to take part you will be asked to do the following:

- Wear an Actiwatch day and night for whole 2 weeks. This is very similar to wearing an extra watch (see picture at the top of the next page). The Actiwatch contains a crystal which monitors your body's movement levels (this includes how much your arm moves, but not where you are)
- Spend up to 20 minutes each day for 2 weeks tape-recording your sleep diary, keeping a diary of your sleep, food and drink, and rating your sleep and mood.
- Giving 2 saliva samples each day for 2 weeks. You can do this yourself by spitting into a tube, which you will be asked to label and store in your home freezer. These samples will give an indication of your biological clock, through analysis of the hormones cortisol and melatonin.
- Have a tape-recorded interview on your own, lasting 30-45 minutes.



Source: Cambridge Neurotechnology website

What type of questions will I be asked in the interview?

The interview will be informal. The questions will depend in some ways on the topics you mention and things you would like to speak about.

You will be asked to talk about similarities and differences between times when your parent works day shifts and night shifts. You may be asked to talk about your sleep, food and drink diary, your ratings of your sleep and mood, and your audio sleep diary.

I am asking to interview you on your own because I am interested in your views. However, if you or your parents are uncomfortable about you being interviewed alone, you can be interviewed together with brothers or sisters, or with a brother, sister, friend or parent sitting in the room with you.

What will happen to the study results?

Everything you say or write, the saliva samples and actigraphic data will remain strictly confidential. In particular, nothing you say or write will be repeated or shown to your parents or any brothers or sisters. The actigraphic data, your saliva samples and everything that you write down for the study will be coded with a number, and your name will not be used at any stage. I will listen to the tape recording of your interview and audio sleep diary, and I will type them up, taking out your name and any other details which might identify you.

The results from this study may be published, but your name will not be used.

Can I stop taking part at any time?

You are free to stop taking part in the study at any time, and you do not have to give a reason. Information and data from people who have stopped taking part in the study will be used only if they agree.

Who is conducting this research and who can I contact for further information?

This research is being conducted by Elizabeth Thompson, a doctoral research student who is funded by the University of Surrey, and the research is being supervised by Professor Sara Arber and Professor Debra Skene from the University of Surrey.

If you would like any further information about this study please contact Elizabeth Thompson (01483 876983 e.thompson@surrey.ac.uk), or her supervisors Professor Sara Arber (01483 686973 s.arber@surrey.ac.uk) and Professor Debra Skene (01483 689706 d.skene@surrey.ac.uk).

Who has reviewed the study?

The study and this information have been given a favourable opinion by South West Surrey NHS Local Ethics Committee and the University of Surrey Ethics Committee. The researcher has also been checked by the Criminal Records Bureau.

I'm interested in taking part. What should I do now?

If you and your parents are interested in taking part in this study, please could your parent fill in the background questionnaire and return it to me in the stamped addressed envelope? Filling in the questionnaire does not mean you have to take part in the study.

Thank you for taking time to read this information. If you would like any more information before deciding whether to take part in this research, please contact me. I look forward to hearing from you.

Elizabeth Thompson
Department of Sociology, University of Surrey
Guildford GU2 7XH
01483 876983 e.thompson@surrey.ac.uk

3.6 - Younger child's information sheet

<University of Surrey headed paper>

<Date>

Sleep, social roles and relationships of nurses who work at night: information for younger children

I am a researcher interested in what children think about one of their parents working at night as a nurse. Would you like to take part in the research? Your answer is your choice completely. Before you decide, it is important to understand why the research is being done and what you would be asked to do. Here are some questions you might want to ask about the research, together with my answers. Please read this information carefully. Talk about it with your family and friends if you want to, and please ask to contact me if anything is not clear or if you would like more information. Take time to decide whether or not you would like to take part.

What is the research about?

The research is trying to find out what nurses think and feel when they work at night, and what their families think and feel too.

Why have I been chosen?

Children who live with a parent who is a nurse working in hospital at night are being invited to take part in the research. The children must be aged between 8 and 18 years.

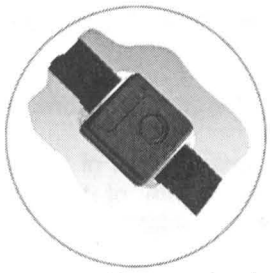
Do I have to take part?

It is up to you to decide whether or not to take part. If you decide to take part you are still free to stop taking part at any time and without giving a reason.

What will happen to me if I take part?

If you decide to take part you will be asked to do the following:

- For 2 weeks, wear a special watch on your wrist called an Actiwatch. The Actiwatch is very similar to an ordinary watch (see picture below). This machine will make a record of your movements for the whole of the 2 weeks, all day and all night.
- Spend a few minutes each day for 2 weeks writing and recording what you've been doing and how you've been feeling – write down what you've eaten, when you've slept and how you feel; and talk into a tape recorder to tell me how well or how badly you think you have slept.
- Twice a day for 2 weeks, spit into a tube. The tubes will be kept in the freezer. Afterwards, the tubes will be taken to a laboratory where chemicals can be added to your spit, which might help me to understand your sleeping patterns.
- A tape recorded interview when you can tell me about yourself and what it is like when your parent works at night.



Source: Cambridge Neurotechnology website

What will the interview be like?

It will be similar to talking to any other adult. I will ask you to tell me about yourself and your family, and your mealtimes and sleeping. I will also ask how you feel and think when your parent is at work at night and when they're asleep during the day. I am interested in what you think so there are no wrong answers to the questions, and I won't tell your parents what you have said.

The interview will be different in two ways from just talking normally. If you agree, what you say will be tape recorded so I don't have to write too many notes. Also, because I am interested in what you think, I would like to interview you on your own. If you don't want to be interviewed on your own, that isn't a problem. You can be interviewed at the same time as any brothers or sisters, or you can talk on your own but with a friend or someone from your family in the room.

Who will know what I say or write?

No one will know what you tell me in the interview, what you say in your recorded diary or what you write down for me. If you want to tell or show someone else what you've said or written that's fine. Your spit will be labelled with a number so no one in the laboratory will know your name.

I would like to publish what I find in the research in books, journals and magazines. This might include writing down some of the things that you've told me, but you will be given a different name, so that no one will know that you said it.

What if I start taking part in the research, but later decide I want to stop?

You can stop taking part in the research at any time and you don't have to tell me why. If you do stop taking part, I won't use any information that you have already given me.

Who are you and how can I find out more about the research?

My name is Elizabeth Thompson, and my research is being supervised by Professor Sara Arber and Professor Debra Skene. My research has been checked by two groups of people called Ethics Committees. They have decided that my research is OK to do.

If you found this information difficult to read or understand, or if you have any questions, please ask your parents. If your parents don't know either, you and your parents are welcome to contact me (01483 876983 e.thompson@surrey.ac.uk) or my supervisors Professor Sara

Arber (01483 686973 s.arber@surrey.ac.uk) or Professor Debra Skene (01483 689706 d.skene@surrey.ac.uk).

I'm interested in taking part. What should I do now?

If your family is interested in taking part in this research, your parent should complete the background questionnaire and return it to me in the stamped addressed envelope. Returning the form does not mean you have to take part in the research.

Thank you for reading this information.

Elizabeth Thompson
Department of Sociology
University of Surrey
Guildford GU2 7XH
01483 876983
e.thompson@surrey.ac.uk

3.7 - Background questionnaire

Sleep, social roles and relationships of nurses who work at night
Background questionnaire

If you are interested in participating in the research, please complete the following questionnaire with details about yourself, your spouse/partner, and children living with you.

Completing this questionnaire does not in any way commit you to participating, and nor does it show your consent to participate in the research. The information given here will be treated in the strictest confidence in accordance with the Data Protection Act 1998.

Information about the nurse

Title: *Name:*

Female/Male (delete as appropriate)

Date of Birth:

Ethnicity:

☐ *Indian / Pakistani / Bangladeshi*

☐ *Black-Caribbean / Black-African*

☐ *White-European/White-Other*

☐ *Chinese / Japanese/Asian-Other*

☐ *White-UK/Irish*

☐ *Mixed Race/Other (please specify)*

.....

.....

Qualifications/Grade:

How many hours are do you usually work per week?

How long have you been doing any work at night? Please give details.

Please give any outline of your typical current shift pattern, including details of any work at night. Please include the start and end times of shifts and details of any breaks.

Do you ever take any medicine to help you sleep? If so, please indicate what you take and how frequently.

How long have you been married to your spouse or lived with your partner? (If both apply, please give the earlier date.)

Information about the nurse's spouse/partner

Title: *Name:*

Date of Birth:

Female/Male (delete as appropriate)

Ethnicity:

☐ *Indian / Pakistani / Bangladeshi*

☐ *Chinese / Japanese/Asian-Other*

☐ *Black-Caribbean / Black-African*

☐ *White-UK/Irish*

☐ *White-European/White-Other*

☐ *Mixed Race/Other (please specify)*

.....

Occupation:

If your spouse/partner is in paid employment, please give an indication of their typical working patterns, including details of any work at night.

Please indicate whether your spouse/partner ever takes any medicine to help them sleep, and if so, what is taken and how frequently.

Can your spouse/partner understand, speak and write English without assistance?

Information about children

Please give the names, dates of birth, gender and ethnicity of any age living with you (your own children, step children, adopted or fostered). If they ever take medicine to help them to sleep, please detail this information.

Child's name	Date of Birth	Female/Male	Ethnicity – please specify ethnic group from the six categories above	Any medicine taken to help them sleep?

Do you share your home with anyone other than your spouse/partner and children? Does anyone live with you part of the time? (For example, children resident at weekends only.) If so, please give details below.

Information about your home

Home address:

E-mail address (if any):

Home telephone number:

Mobile telephone number (if any):

When would be the most convenient time for me to telephone you to discuss your participation in this research?

Do you have use of a freezer? (Saliva samples need to be stored in a freezer.)
Please indicate approximate size (i.e. small freezer in fridge, fridge-freezer, chest freezer).

Thank you very much for taking the time to complete this questionnaire. I will be in contact with you soon to discuss your participation in this research. If you have any questions in the meantime, please do not hesitate to contact me:

Elizabeth Thompson
Department of Sociology
University of Surrey
Guildford
Surrey GU2 7XH
01483 876983
e.thompson@surrey.ac.uk

Supervisors:
Professor Sara Arber 01483 686973 s.arber@surrey.ac.uk
Professor Debra Skene 01483 689706 d.skene@surrey.ac.uk

Appendix 4 – Initial visit pack

The initial visit pack consisted of a set of documents taken to the initial visit by the researcher. These documents included:

- Diagram of participation process (Appendix 3.2) to facilitate discussion of the study methods and the process of obtaining informed consent
- Copies of consent forms for each potentially participating family member:
  - Nurse's consent form (Appendix 4.1)
  - Husband/partner's consent form (Appendix 4.2)
  - Older children's consent form(s) (Appendix 4.3)
  - Younger children's consent form(s) (Appendix 4.4)
- 2 week participant booklets for each potentially participating family member
  - Nurse's participant booklet (Appendix 4.5)
  - Husband/partner's participant booklet (Appendix 4.6)
  - Older children's participant booklet(s) (Appendix 4.7)
  - Younger children's participant booklet(s) (Appendix 4.8)
  - Joint couple qualitative interview schedule (example at Appendix 4.9)

4.1 – Nurse's consent form

<University of Surrey headed paper>

Sleep, social roles and relationships of nurses who work at night

Chief Investigator: Elizabeth Thompson

Consent form for nurses

- I confirm that I have read and understand the information sheet dated <date> for the above study and have had the opportunity to ask questions.
- I understand that my participation is voluntary and that I am free to withdraw at anytime, without giving a reason.
- I agree to take part in the above study.

Name of nurse:
(BLOCK CAPITALS)

Signed: Date:

Researcher:
(BLOCK CAPITALS)

Signed: Date:

4.2 Partner's consent form

<University of Surrey headed paper>

Sleep, social roles and relationships of nurses who work at night

Chief Investigator: Elizabeth Thompson

Consent form for spouses/partners

- I confirm that I have read and understand the information sheet dated <date> for the above study and have had the opportunity to ask questions.
- I understand that my participation is voluntary and that I am free to withdraw at anytime, without giving a reason.
- I agree to take part in the above study.

Name of spouse/partner:
(BLOCK CAPITALS)

Signed: Date:

Researcher:
(BLOCK CAPITALS)

Signed: Date:

4.3 Older child's consent form

<University of Surrey headed paper>

Sleep, social roles and relationships of nurses who work at night

Chief Investigator: Elizabeth Thompson

Consent form for older children

- I confirm that I have read and understand the information sheet dated <date> for the above study and have had the opportunity to ask questions.
- I understand that my participation is voluntary and that I am free to withdraw at anytime, without giving a reason.
- I agree to take part in the above study.

Name of nurse's child:
(BLOCK CAPITALS)

Child's Date of Birth:

Signed:

Date:

Name of child's parent:
(BLOCK CAPITALS)

Signed:

Date:

Researcher:
(BLOCK CAPITALS)

Signed:

Date:

4.4 Younger child's consent form

<University of Surrey headed paper>

Sleep, social roles and relationships of nurses who work at night
Chief Investigator: Elizabeth Thompson
Consent form for younger children

Please read the questions below and answer each question by circling "Yes" or "No."

Have you read (or had read to you) about this research?	Yes or No
Has the researcher explained this research to you?	Yes or No
Do you understand what this research is about?	Yes or No
Have you asked all the questions you want about the research?	Yes or No
Have you had your questions answered in a way you understand?	Yes or No
Do you understand it's OK to stop taking part at any time?	Yes or No
Are you happy to take part?	Yes or No

If you have answered "No" to any questions or you don't want to take part, please don't sign your name.

If you do want to take part, please write your name and today's date below next to where it says "Signed"

Name of nurse's child:
(BLOCK CAPITALS)

Child's date of birth:

Signed:

Date:

Name of child's parent:
(BLOCK CAPITALS)

Signed:

Date:

Researcher:
(BLOCK CAPITALS)

Signed:

Date:

4.5 Nurse's two week booklet

Sleep, social roles and relationships of nurses who work at night

Nurse's Two Week Booklet

If you have questions at any point, please do not hesitate to contact:

Elizabeth Thompson
Department of Sociology
University of Surrey
Guildford
GU2 7XH
01483 876983 (office)
07763337660 (mobile)
e.thompson@surrey.ac.uk

Sleep, social roles and relationships of nurses who work at night

Nurse's Two Week Booklet

Thank you for agreeing to participate in this research. Please keep this booklet safe. It contains information to guide you through what you have been asked to do during the next two weeks and includes blank questionnaires and log sheets for you to complete.

Your participant code is:

If you have questions at any point, please do not hesitate to contact: Elizabeth Thompson, Department of Sociology, University of Surrey, Guildford GU2 7XH 01483 876983 (office) or 07763337660 (mobile) e.thompson@surrey.ac.uk

Contents

(N.B. Only the pages for Day 1 are shown as these are identical for all subsequent days during the two week study period.)

Details about Actiwatch-L

You have been asked to wear the Actiwatch-L outside your sleeves on your non-dominant wrist for the whole of the two week period. The Actiwatch-L records your movements, and together with your sleep log and audio sleep diary, will give indications about the length and nature of your daily activities and sleep. The Actiwatch-L also records light intensity for the environment where you are, so it is very important that your sleeves do not cover the Actiwatch-L.

The Actiwatch-L is not waterproof, so please remove it and put it somewhere safe and dry while you wash, shower or swim etc. Please record in your sleep log when and for how long you removed the Actiwatch-L, and don't forget to put it back on once you are dry.

Summary of what you have been asked to do each day

This booklet is arranged to remind you what to do on each day. Soon after you wake up in the morning, please:

- Collect a **saliva sample**.
- Fill in your **sleep quality and sleepiness scales**.
- Record your sleep in your **sleep log**.
- Record **your thoughts about your sleep** using the Dictaphone.

Please fill in your **food and drink log** each day.

Just before you go to bed, please:

- Collect a second **saliva sample**.
- Fill in your **mood scales**.

When you are working nights, please:

- Collect a **saliva sample** as close as possible to your **normal bedtime**.
- In the morning, please collect a **saliva sample** as close as possible to your **normal waking up time.**
- Before you go to sleep when you return from work, please fill in your **mood scales**.
- When you wake from daytime sleep, please fill in your **sleepiness and sleep quality scales** and record **your thoughts about your sleep** using the Dictaphone.
- Please also remember to record your sleep in your **sleep log**, and to complete your **food and drink log**.

Audio sleep diary instructions

Please record your thoughts about your sleep using the Dictaphone at a convenient time soon after you have woken up in the morning or from your main period of daytime sleep. You are also welcome to add to your audio sleep diary at any point during the day, but please remember to state the day and time when you start your recording.

Please say the day and time when you are making your recording. Please say whatever comes to mind about your main sleep and naps, what may have affected your sleep, and your feelings.

You may want to talk about some of the following:

- Your feelings yesterday, before going to bed and now
- If you were at work last night, how did felt during the evening and night
- Whether your spouse/partner slept in the same bed and at the same times as you
- Your bed, room, home, street etc. and any influences on your sleep
- Getting to sleep
- Waking in the night
- Reasons for going to bed, sleeping and waking at those times
- The quality of your sleep
- Any naps
- Anything unusual about your sleep

If you have any problems with the Dictaphone, please immediately contact Elizabeth Thompson (01483 876983 (daytime) 07763337660 (mobile) e.thompson@surrey.ac.uk).

Saliva sample instructions

Please collect a sample of your saliva just after you have woken up in the morning and just before going to bed in the evening. When you are working night duties, please collect your saliva sample as close as possible to your normal bedtime and waking time. If there is time and a fridge available, please collect your sample at work and store it in the fridge until you can transfer it to your home freezer. If this is not possible, please collect your sample before going to work and on returning from work.

It is important that you do not eat, drink, or brush your teeth just before collecting your sample, or the saliva may be contaminated with food, drink or blood. If you usually have an early morning drink, please collect your sample before your drink, and if you usually have a bedtime drink, please collect your sample before that.

Please collect your sample by spitting into the plastic tube labelled with your participant code, the appropriate date and morning/evening. Please make sure that there is at least 1cm of saliva in the tube. **Please note the time your saliva was sampled on this booklet, and put the tube in your freezer.**

Day 1 - Morning

Day of Week: ..... **Date: .....**

Please complete the sleep quality and sleepiness scales when you wake in the morning.
When you are working nights, please complete the sleep quality and sleepiness scales when you wake from your daytime sleep.

Time you did your morning saliva sample: .....

Time you completed these scales: .....

Please circle the description which you feel best describes the quality of your sleep last night or during the day today.

Very good

Fairly good

Fairly bad

Very bad

Please circle the number in the table below which best represents how you feel right now.

Very alert	1
	2
Alert – normal level	3
	4
Neither alert nor sleepy	5
	6
Sleepy, but little effort to keep awake	7
	8
Very sleepy, great effort to keep awake	9

Have you done your audio sleep diary today?

Day 1 – Sleep and Actiwatch-L Logs

Please write down all your sleep (nighttime, daytime and naps) between 00:00 and 23:59 If you think you might have dozed off or aren't sure, please just write down what you remember.					
When did you go to bed or prepare for a nap?	When did you start trying to go to sleep?	How long do you think it took you to fall asleep?	If you woke up during the night, when, and for how long?	When did you wake up in the morning or at the end of your nap or daytime sleep?	When did you get up?

Actiwatch-L Log

Please note when, for how long, and why you took off your Actiwatch-L between 00.00 and 23.59.

Time when you took off your Actiwatch-L	Time when you put your Actiwatch-L back on	Reason for removing your Actiwatch-L

Day 1 – Food and Drink Log

Please record details of all food and drink you consumed between 00:00 and 23:59					
Time (please indicate in 24 hour clock code)	What did you eat or drink?	Did it contain alcohol or caffeine (chocolate, coffee, caffeinated drinks)?	Where were you? (e.g. staff canteen at work, kitchen at home)	Who, if anyone, were you with at the time? Were they eating or drinking?	Who prepared the food or drink?

Day 1 – Evening

Please complete these mood scales before you go to bed (either in the evening or when you return from a night shift before daytime sleep).

Please remember you should collect an evening saliva sample even when you're working that night.

Time you did your evening saliva sample: .....

Time you completed these scales: .....

Please circle the number which best represents how you have felt since this morning (or when you last slept for a long period).

Very cheerful	1	2	3	4	5	6	7	8	9	Very miserable
Very calm	1	2	3	4	5	6	7	8	9	Very tense
Very depressed	1	2	3	4	5	6	7	8	9	Very elated
Very alert	1	2	3	4	5	6	7	8	9	Very sleepy

Have you got anything to add to your audio sleep diary?

Thank you for your help today.

4.6 Partner's two week booklet

Sleep, social roles and relationships of nurses who work at night

Spouse/partner's Two Week Booklet

If you have questions at any point, please do not hesitate to contact:

Elizabeth Thompson
Department of Sociology
University of Surrey
Guildford
GU2 7XH
01483 876983 (office)
07763337660 (mobile)
e.thompson@surrey.ac.uk

Sleep, social roles and relationships of nurses who work at night

Spouse/partner's Two Week Booklet

Thank you for agreeing to participate in this research. Please keep this booklet safe. It contains information to guide you through what you have been asked to do during the next two weeks and includes blank questionnaires and log sheets for you to complete.

Your participant code is:

If you have questions at any point, please do not hesitate to contact: Elizabeth Thompson, Department of Sociology, University of Surrey, Guildford GU2 7XH 01483 876983 (office) or 07763337660 (mobile) e.thompson@surrey.ac.uk

Contents

(N.B. Only the pages for Day 1 are shown as these are identical for all subsequent days during the two week study period.)

Details about the Actiwatch

You have been asked to wear the Actiwatch on your non-dominant wrist for the whole of the two week period. The Actiwatch records your movements, and together with your sleep log and audio sleep diary, will give indications about the length and nature of your daily activities and sleep. It does not matter whether you wear the Actiwatch outside or inside your sleeves.

The Actiwatch is not waterproof, so please remove it and put it somewhere safe and dry while you wash, shower or swim etc. Please record in your sleep log when and for how long you removed the Actiwatch, and don't forget to put it back on once you are dry.

Summary of what you have been asked to do each day

This booklet is arranged to remind you what to do on each day. Soon after you wake up in the morning, please:

- Collect a **saliva sample**.
- Fill in your **sleep quality and sleepiness scales**.
- Record your sleep in your **sleep log**.
- Record **your thoughts about your sleep** using the Dictaphone.

Please fill in your **food and drink log** each day.

Just before you go to bed, please:

- Collect a second **saliva sample**.
- Fill in your **mood scales**.

Audio sleep diary instructions

Please record your thoughts about your sleep using the Dictaphone at a convenient time soon after you have woken up in the morning. You are also welcome to add to your audio sleep diary at any point during the day, but please remember to state the day and time when you start your recording.

Please say the day and time when you are making your recording. Please say whatever comes to mind about your main sleep and naps, what may have affected your sleep, and your feelings.

You may want to talk about some of the following:

- Your feelings yesterday, before going to bed and now
- Whether your spouse/partner slept in the same bed and at the same times as you
- Your bed, room, home, street etc. and any influences on your sleep
- Getting to sleep
- Waking in the night
- Reasons for going to bed, sleeping and waking at those times
- The quality of your sleep
- Any naps
- Anything unusual about your sleep

If you have any problems with the Dictaphone, please immediately contact Elizabeth Thompson (01483 876983 (daytime) 07763337660 (mobile) e.thompson@surrey.ac.uk).

Saliva sample instructions

Please collect a sample of your saliva just after you have woken up in the morning and just before going to bed in the evening.

It is important that you do not eat, drink, or brush your teeth just before collecting your sample, or the saliva may be contaminated with food, drink or blood. If you usually have an early morning drink, please collect your sample before your drink, and if you usually have a bedtime drink, please collect your sample before that.

Please collect your sample by spitting into the plastic tube labelled with your participant code, the appropriate date and morning/evening. Please make sure that there is at least 1cm of saliva in the tube. **Please note the time your saliva was sampled in this booklet, and put the tube in your freezer.**

Day 1 - Morning

Day of Week: ..... **Date: .....**

Please complete the sleep quality and sleepiness scales when you wake in the morning.

Time you did your morning saliva sample: .....

Time you completed these scales: .....

Please circle the description which you feel best describes the quality of your sleep last night.

Very good

Fairly good

Fairly bad

Very bad

Please circle the number in the table below which best represents how you feel right now.

Very alert	1
	2
Alert – normal level	3
	4
Neither alert nor sleepy	5
	6
Sleepy, but little effort to keep awake	7
	8
Very sleepy, great effort to keep awake	9

Have you done your audio sleep diary today?

Day 1 – Sleep and Actiwatch Logs

Please write down all your sleep (nighttime, daytime and naps) between 00:00 and 23:59 If you think you might have dozed off or aren't sure, please just write down what you remember.					
When did you go to bed or prepare for a nap?	When did you start trying to go to sleep?	How long do you think it took you to fall asleep?	If you woke up during the night, when, and for how long?	When did you wake up in the morning or at the end of your nap or daytime sleep?	When did you get up?

Actiwatch Log

Please note when, for how long, and why you took off your Actiwatch between 00.00 and 23.59.

Time when you took off your Actiwatch	Time when you put your Actiwatch back on	Reason for removing your Actiwatch

Day 1 – Food and Drink Log

Please record details of all food and drink you consumed between 00:00 and 23.59					
Time (please indicate in 24 hour clock code)	What did you eat or drink?	Did it contain alcohol or caffeine (chocolate, coffee, caffeinated drinks)?	Where were you? (e.g. staff canteen at work, kitchen at home)	Who, if anyone, were you with at the time? Were they eating or drinking?	Who prepared the food or drink?

Day 1 – Evening

Please complete these mood scales before you go to bed.

Time you did your evening saliva sample: .....

Time you completed these scales: .....

Please circle the number which best represents how you have felt since this morning.

Very cheerful	1	2	3	4	5	6	7	8	9	Very miserable
Very calm	1	2	3	4	5	6	7	8	9	Very tense
Very depressed	1	2	3	4	5	6	7	8	9	Very elated
Very alert	1	2	3	4	5	6	7	8	9	Very sleepy

Have you got anything to add to your audio sleep diary?

Thank you for your help today.

4.7 Older child's two week booklet

Sleep, social roles and relationships of nurses who work at night

Older child's Two Week Booklet

If you have questions at any point, please do not hesitate to contact:

Elizabeth Thompson
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University of Surrey
Guildford
GU2 7XH
01483 876983 (office)
07763337660 (mobile)
e.thompson@surrey.ac.uk

Sleep, social roles and relationships of nurses who work at night

Older child's Two Week Booklet

Thank you for agreeing to participate in this research. Please keep this booklet safe. It contains information to guide you through what you have been asked to do during the next two weeks and includes blank questionnaires and log sheets for you to complete.

Your participant code is:

If you have questions at any point, please do not hesitate to contact: Elizabeth Thompson, Department of Sociology, University of Surrey, Guildford GU2 7XH 01483 876983 (office) or 07763337660 (mobile) e.thompson@surrey.ac.uk

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(N.B. Only the pages for Day 1 are shown as these are identical for all subsequent days during the two week study period.)

Details about the Actiwatch

You have been asked to wear the Actiwatch on your non-dominant wrist for the whole of the two week period. The Actiwatch records your movements, and together with your sleep log and audio sleep diary, will give indications about the length and nature of your daily activities and sleep. It does not matter whether you wear the Actiwatch outside or inside your sleeves.

The Actiwatch is not waterproof, so please remove it and put it somewhere safe and dry while you wash, shower or swim etc. Please record in your sleep log when and for how long you removed the Actiwatch, and don't forget to put it back on once you are dry.

Summary of what you have been asked to do each day

This booklet is arranged to remind you what to do on each day. Soon after you wake up in the morning, please:

- Collect a **saliva sample**.
- Fill in your **sleep quality and sleepiness scales**.
- Record your sleep in your **sleep log**.
- Record **your thoughts about your sleep** using the Dictaphone.

Please fill in your **food and drink log** each day.

Just before you go to bed, please:

- Collect a second **saliva sample**.
- Fill in your **mood scales**.

Audio sleep diary instructions

Please record your thoughts about your sleep using the Dictaphone at a convenient time soon after you have woken up in the morning. You are also welcome to add to your audio sleep diary at any point during the day, but please remember to state the day and time when you start your recording.

Please say the day and time when you are making your recording. Please say whatever comes to mind about your main sleep and naps, what may have affected your sleep, and your feelings.

You may want to talk about some of the following:

- Your feelings yesterday, before going to bed and now
- Where there any pets or anyone else in the bed or room?
- Getting to sleep
- Waking in the night
- Reasons for going to bed, sleeping and waking at those times
- The quality of your sleep
- Any naps
- Anything unusual about your sleep

If you have any problems with the Dictaphone, please immediately contact Elizabeth Thompson (01483 876983 (daytime) 07763337660 (mobile) e.thompson@surrey.ac.uk).

Saliva sample instructions

Please collect a sample of your saliva just after you have woken up in the morning and just before going to bed in the evening.

It is important that you do not eat, drink, or brush your teeth just before collecting your sample, or the saliva may be contaminated with food, drink or blood. If you usually have an early morning drink, please collect your sample before your drink, and if you usually have a bedtime drink, please collect your sample before that.

Please collect your sample by spitting into the plastic tube labelled with your participant code, the appropriate date and morning/evening. Please make sure that there is at least 1cm of saliva in the tube. **Please note the time your saliva was sampled in this booklet, and put the tube in your freezer.**

Day 1 - Morning

Day of Week: ..... **Date:** .....

Please complete the sleep quality and sleepiness scales when you wake in the morning.

Time you did your morning saliva sample: .....

Time you completed these scales: .....

Please circle the description which you feel best describes the quality of your sleep last night.

Very good

Fairly good

Fairly bad

Very bad

Please circle the number in the table below which best represents how you feel right now.

Very alert	1
	2
Alert – normal level	3
	4
Neither alert nor sleepy	5
	6
Sleepy, but little effort to keep awake	7
	8
Very sleepy, great effort to keep awake	9

Have you done your audio sleep diary today?

Day 1 – Sleep and Actiwatch Logs

Please write down all your sleep (nighttime, daytime and naps) between 00:00 and 23:59 If you think you might have dozed off or aren't sure, please just write down what you remember.					
When did you go to bed or prepare for a nap?	When did you start trying to go to sleep?	How long do you think it took you to fall asleep?	If you woke up during the night, when, and for how long?	When did you wake up in the morning or at the end of your nap or daytime sleep?	When did you get up?

Actiwatch Log

Please note when, for how long, and why you took off your Actiwatch between 00.00 and 23.59.

Time when you took off your Actiwatch	Time when you put your Actiwatch back on	Reason for removing your Actiwatch

Day 1 – Food and Drink Log

Please record details of all food and drink you consumed between 00:00 and 23.59					
Time (please indicate in 24 hour clock code)	What did you eat or drink?	Did it contain alcohol or caffeine (chocolate, coffee, caffeinated drinks)?	Where were you? (e.g. school/college canteen, kitchen at home)	Who, if anyone, were you with at the time? Were they eating or drinking?	Who prepared the food or drink?

Day 1 – Evening

Please complete these mood scales before you go to bed.

Time you did your evening saliva sample: .....

Time you completed these scales: .....

Please circle the number which best represents how you have felt since this morning.

Very cheerful	1	2	3	4	5	6	7	8	9	Very miserable
Very calm	1	2	3	4	5	6	7	8	9	Very tense
Very depressed	1	2	3	4	5	6	7	8	9	Very elated
Very alert	1	2	3	4	5	6	7	8	9	Very sleepy

Have you got anything to add to your audio sleep diary?

Thank you for your help today.

4.8 Younger child's two week booklet

Sleep, social roles and relationships of nurses who work at night

Younger child's Two Week Booklet

If you have questions at any point, please ask your parents. If they don't know the answer, you and your parents should contact:

Elizabeth Thompson
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University of Surrey
Guildford
GU2 7XH
01483 876983 (office)
07763337660 (mobile)
e.thompson@surrey.ac.uk

Sleep, social roles and relationships of nurses who work at night

Younger child's Two Week Booklet

Thank you for agreeing to participate in this research. Please keep this booklet safe. It contains information to guide you through what you have been asked to do during the next two weeks and includes blank questionnaires and log sheets for you to complete.

Your participant code is:

If you have questions at any point, please ask your parents. If they don't know either, you and parents should contact: Elizabeth Thompson, Department of Sociology, University of Surrey, Guildford GU2 7XH 01483 876983 (daytime) or 07763337660 (mobile) e.thompson@surrey.ac.uk

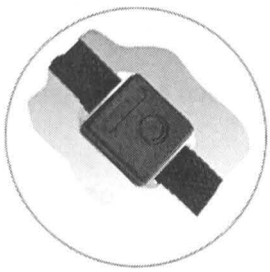
Contents

(N.B. Only the pages for Day 1 are shown as these are identical for all subsequent days during the two week study period.)

Details about the Actiwatch

You have been asked to wear a small machine called an Actiwatch on the wrist of the hand you don't use to write. The Actiwatch will keep a record of your movements for the whole of the 2 weeks, including all day and all night. It does not matter whether you wear the Actiwatch outside or inside your sleeves.

The Actiwatch has a crystal inside it, so please look after it very carefully. The Actiwatch isn't waterproof, so please take it off and put it somewhere safe and dry when you get washed, shower or go swimming or do anything else which might make you very wet. Don't forget to put the Actiwatch back on once you're dry! Please write down in your sleep log when and for how long you took the Actiwatch off.



Source: Cambridge Neurotechnology website

What you have been asked to do each day

This booklet is arranged to remind you what to do on each day. Soon after you wake up in the morning, please:

- Collect some of your **spit**.
- Fill in your **sleep quality and sleepiness scales**.
- Fill in your **sleep log**.
- Record **your thoughts about your sleep** using the tape recorder.

Please fill in your **food and drink log** each day.

Just before you go to bed, please:

- Collect a second tube of your **spit**.
- Fill in your **mood scales**.

Audio sleep diary instructions

Please record your thoughts about your sleep using the tape recorder soon after you wake up. You are also welcome to add to your audio sleep diary at any point during the day, but please remember to tell me what the time is and what day it is when you start speaking into it.

Please say the day and time when you are making your recording. Please say whatever comes to mind about your main sleep and naps, what may have affected your sleep, and your feelings.

You may want to talk about some of the following:

- Your feelings yesterday, before going to bed and now
- Where there any pets or anyone else in the bed or room?
- Getting to sleep
- Waking in the night
- Reasons for going to bed, sleeping and waking at those times
- The quality of your sleep
- Any naps
- Anything unusual about your sleep

Spit sample instructions

Please spit into one of the plastic tubes each morning just after you wake up, and each evening just before you go to bed. There is different tube labelled ready for you for each morning and evening – please make sure you use the right one! Please make sure that there is at least 1cm of spit in the tube, and put on the lid. **Please note the time your saliva was sampled in this booklet, and put the tube in your freezer.**

It is important that you do not eat, drink, or brush your teeth just before collecting your sample, or your spit may get mixed up with food, drink or blood. If you usually have an early morning drink, please collect your sample before your drink, and if you usually have a bedtime drink, please collect your sample before that.

Day 1 - Morning

Day of Week: ..... **Date:** .....

Please fill in the sleep quality and sleepiness scales when you wake in the morning.

Time you did your morning spit sample: .....

Time you completed these scales: .....

Please circle the description which you feel best shows what your sleep was like last night.

Very good

Fairly good

Fairly bad

Very bad

Please circle the number in the table below which best shows how you feel right now.

Very wide awake	1
	2
Wide awake – normal level	3
	4
Neither wide awake nor sleepy	5
	6
Sleepy, but little effort to keep awake	7
	8
Very sleepy, great effort to keep awake	9

Have you done your audio sleep diary today?

Day 1 – Sleep and Actiwatch Logs

Please write down all your sleep (nighttime, daytime and naps) between 00:00 and 23:59
If you think you might have dozed off or aren't sure, please just write down what you remember.

When did you go to bed or prepare for a nap?	When did you start trying to go to sleep?	How long do you think it took you to fall asleep?	If you woke up during the night, when, and for how long?	When did you wake up in the morning or at the end of your nap or daytime sleep?	When did you get up?

Actiwatch Log

Please note when, for how long, and why you took off your Actiwatch between 00.00 and 23.59.

Time when you took off your Actiwatch	Time when you put your Actiwatch back on	Why did you take off your Actiwatch?

Day 1 – Food and Drink Log

Please write down all the food and drink you ate or drank between 00:00 and 23.59				
Time (please say whether morning or afternoon/evening)	What did you eat or drink?	Where were you? (e.g. classroom at school, kitchen at home)	Who, if anyone, were you with at the time? Were they eating or drinking?	Who prepared the food or drink?

Day 1 – Evening

Please fill in these mood scales before you go to bed.

Time you did your evening spit sample: .....

Time you completed these scales: .....

For each pair of words, please think about which word is closer to how you have felt today.
Please draw a circle around the number which you think shows where you have been between these two words.
If you don't think you have felt like either of those words, choose 5.

Very cheerful	1	2	3	4	5	6	7	8	9	Very miserable
Very calm	1	2	3	4	5	6	7	8	9	Very worried
Very sad	1	2	3	4	5	6	7	8	9	Very happy
Very wide awake	1	2	3	4	5	6	7	8	9	Very sleepy

Have you got anything to add to your audio sleep diary?

Thank you for your help today.

4.9 Joint couple qualitative interview example topic guide

Sleep, social roles and relationships of nurses who work at night
Joint initial interview - Example topic guide

Introduction Tape recording Confidentiality Purpose	 Consent Can stop at any time Not repeated to anyone inc. children I transcribe it General discussion about your relationship, household, work and sleep No set hypotheses – interested in what you have to say Talk to and discuss between yourselves – don't feel you need to talk to me all the time or wait for me to ask you questions directly
Yourselves Ask them to tell me about themselves Household tasks Free time	 How long known each other How long they have lived there Training/education Current and former employment How do they do things like doing the washing, shopping, mowing the lawn, cooking, cleaning the windows, gardening, sorting out finances? What sort of things do you like to do in your free time? How do you relax? Holidays Treats
Food, drink and meals Usually	 When, where, with whom? Alcohol, tobacco, caffeine
Good sleep What is a good night's sleep?	Frequency Importance Why/Why not? For you individually/together/other people?
Normal sleep - timing What is your sleep like when no nightshifts? Waking up Bedtime and wake time routines/role passages	 Bed time/Sleep time Wake up time/Get up time When do you start going to bed, and why? What do you do between then and getting into bed? How and why these sleep times What like for you/what do youdo? Use of Alarm clock Baths, read, brush teeth, snack, hot drink? Breakfast and food

Sleep as a couple Sleep similarities/differences	Morning or evening sort of people? Negotiation? Disturb sleep?
Sleep location	Where do you sleep? Ever co-sleep with children?
Sleep changes	How? Why? Age, marriage, parenthood etc Seasonal changes?
Sleep problems?	How do you deal with?
Bedroom environment	Bed, pillows, covers, electric blankets, Lighting arrangements, curtains TV and radio How these are chosen Influence of temperature and light
Night shifts – just briefly Patterns	Times, frequency – since when? Chosen or not chosen nights
Couple/family and nightshifts	Eating and food and drink – timing? Where? Sleeping? Nurse and spouse/partner How do you find sleeping separately and at different times? Family schedules and daily routines – changes?
Good things about nightshifts	Strategies for coping? Children? Similarities/differences day/nightshifts? If not previously mentioned any/Recap
Good health and you What does good health mean to you?	How describe? Criteria? What might stop you from being in good health? Do you think sleep has a role in good health?
How healthy or unhealthy do you think you are?	In what way? How would you decide? Would you like to change anything about your health status? What helps/stops you from doing that?
How healthy or unhealthy do you think your children are?	Why? How?
Night shifts and health	Would you say more or less healthy since started night shifts, or no change? How? Why?
Concluding Sleep and nightshifts in general	Do you discuss/think about? Did you do any preparation?
Anything else	Anything I should change? Uncomfortable? Anything to add?
Thank you	Any questions?

Appendix 5 Pittsburgh Sleep Quality Index questionnaire

Pittsburgh Sleep Quality Index questionnaire

Participant Code:

Instructions:
The following questions relate to your usual sleep habits during the past month *only*. Your answers should indicate the most accurate reply for the *majority* of days and nights in the past month. Please answer all the questions.

1) **During the past month, when have you usually gone to bed at night?**

   Usual bed time:

2) **During the past month, how long (in minutes) has it usually take you to fall asleep each night?**

   Number of minutes:

3) **During the past month, when have you usually got up in the morning?**

   Usual getting up time:

4) **During the past month, how many hours of actual sleep did you get at night? (This may be different from the number of hours spent in bed.)**

   Hours of sleep per night:

For each of the remaining questions, please tick the one best response. Please answer all questions.

5) **During the past month, how often have you had trouble sleeping because you.....**

a) Cannot get to sleep within 30 minutes

Not during the past month	Less than once a week	Once or twice a week	Three or more times a week
_____	_____	_____	_____

b) Wake up in the middle of the night or early morning

Not during the past month	Less than once a week	Once or twice a week	Three or more times a week
_____	_____	_____	_____

c) Have to get up to use the bathroom

Not during the past month	Less than once a week	Once or twice a week	Three or more times a week
_____	_____	_____	_____

d) Cannot breathe comfortably

Not during the past month	Less than once a week	Once or twice a week	Three or more times a week
_____	_____	_____	_____

During the past month, how often have you had trouble sleeping because you.....

e) Cough or snore loudly

Not during the past month	Less than once a week	Once or twice a week	Three or more times a week
_____	_____	_____	_____

f) Feel too cold

Not during the past month	Less than once a week	Once or twice a week	Three or more times a week
_____	_____	_____	_____

g) Feel too hot

Not during the past month	Less than once a week	Once or twice a week	Three or more times a week
_____	_____	_____	_____

h) Had bad dreams

Not during the past month	Less than once a week	Once or twice a week	Three or more times a week
_____	_____	_____	_____

i) Have pain

Not during the past month	Less than once a week	Once or twice a week	Three or more times a week
_____	_____	_____	_____

j) Other reason(s), please describe

_____

_____

_____

How often during the past month have you had trouble sleeping because of this?

Not during the past month	Less than once a week	Once or twice a week	Three or more times a week
_____	_____	_____	_____

6) During the past month, how would you rate your sleep quality overall?

Very good_____

Fairly good_____

Fairly bad_____

Very bad_____

7) During the past month, how often have you taken medicine (prescribed or "over the counter") to help you sleep?

Not during the past month	Less than once a week	Once or twice a week	Three or more times a week
_____	_____	_____	_____

8) During the past month, how often have you had trouble staying awake while driving, eating meals, or engaging in social activity?

Not during the past month	Less than once a week	Once or twice a week	Three or more times a week
_____	_____	_____	_____

9) During the past month, how much of a problem has it been for you to show enthusiasm to get things done?

No problem at all_____

Only a very slight problem_____

Somewhat of a problem_____

A very big problem_____

10) Do you have a bed partner or roommate?

No bed partner or roommate?_____

Partner/roommate in other room_____

Partner in same room, but not same bed_____

Partner in same bed_____

If you have a roommate or bed partner, ask him/her how often in the past month you have had)...

a) Loud snoring

Not during the past month	Less than once a week	Once or twice a week	Three or more times a week
_____	_____	_____	_____

b) Long pauses between breaths while asleep

Not during the past month	Less than once a week	Once or twice a week	Three or more times a week
_____	_____	_____	_____

c) Legs twitching or jerking while you sleep

Not during the past month	Less than once a week	Once or twice a week	Three or more times a week
_____	_____	_____	_____

d) Episodes of disorientation or confusion during sleep?

Not during the past month	Less than once a week	Once or twice a week	Three or more times a week
_____	_____	_____	_____

e) Other restlessness while you sleep; please describe

_____

_____

Not during the past month	Less than once a week	Once or twice a week	Three or more times a week
_____	_____	_____	_____

Appendix 6 - Horne-Őstberg morningness-eveningness questionnaire

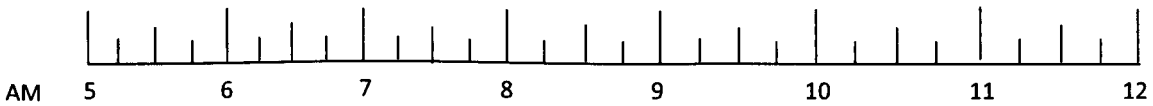
Horne-Őstberg morningness-eveningness questionnaire

Participant Code:

a) Please read each question very carefully before answering.
b) Please answer **ALL** questions.
c) Each question should be answered in numerical order and independently of others. Do **NOT** go back and check your answers.
d) All questions have a selection of answers. For each question place a cross alongside **ONE** answer only. Some questions have a scale instead of a selection of answers. Place a cross at the appropriate point on the scale.
e) Please answer each question as honestly as possible. If you feel the question is NOT relevant to you, **please answer the question as if you were imagining that you would be doing the task, and answer according to your own preference**.
f) Please feel free to make any comments in the section provided below each question.
g) Both your answers and results will be kept in strict confidence.

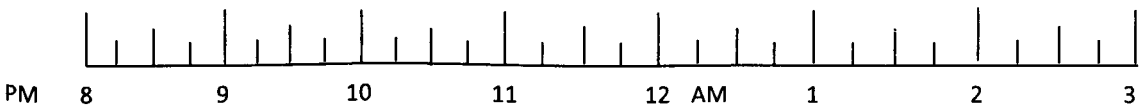
QUESTION 1

Considering only your own "feeling best" rhythm, at what time would you get up if you were entirely free to plan your day?



QUESTION 2

Considering only your own "feeling best" rhythm, at what time would you go to bed if you were entirely free to plan your evening?



QUESTION 3

If there is a specific time you have to get up in the morning, to what extent are you dependent on being woken up by an alarm clock?

a. Not at all dependent [ ]
b. Slightly dependent [ ]
c. Fairly dependent [ ]
d. Very dependent [ ]

QUESTION 4

Assuming adequate environmental conditions, how easy do you find getting up in the morning?

a. Not at all easy [ ]
b. Not very easy [ ]
c. Fairly easy [ ]
d. Very easy [ ]

QUESTION 5

How alert do you feel during the first half hour after having woken in the morning?

a. Not at all alert [ ]
b. Slightly alert [ ]
c. Fairly alert [ ]
d. Very alert [ ]

QUESTION 6

How is your appetite during the first half hour after having woken in the morning?

a. Very poor [ ]
b. Fairly poor [ ]
c. Fairly good [ ]
d. Very good [ ]

QUESTION 7

During the first half hour after having woken in the morning, how tired do you feel?

a. Very tired [ ]
b. Fairly tired [ ]
c. Fairly refreshed [ ]
d. Very refreshed [ ]

QUESTION 8

When you have no commitments the next day, at what time do you go to bed compared to your usual bedtime?

a. Seldom or never later [ ]
b. Less than one hour later [ ]
c. 1-2 hours later [ ]
d. More than 2 hours later [ ]

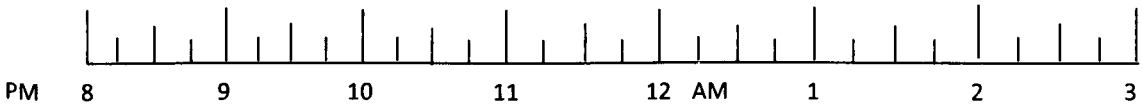
QUESTION 9

You have decided to engage in some physical exercise. A friend suggests that you do this one hour twice a week and the best time for him is between 0700 and 0800h. Bearing in mind nothing else but your own "feeling best" rhythm, how do you think you would perform?

a. Would be on good form [ ]
b. Would be on reasonable form [ ]
c. Would find it difficult [ ]
d. Would find it very difficult [ ]

QUESTION 10

At what time in the evening do you feel tired and as a result in need of sleep?



QUESTION 11

You wish to be at your peak performance for a test which you know is going to be mentally exhausting and lasting for two hours. You are entirely free to plan your day and considering only your own "feeling best" rhythm which ONE of the four testing times would you choose?

a. 0800 – 1000 [ ]
b. 1100 – 1300 [ ]
c. 1500 – 1700 [ ]
d. 1900 – 2100 [ ]

QUESTION 12

If you went to bed at 11:00pm (2300h) at what level of tiredness would you be?

a. Not at all tired [ ]
b. A little tired [ ]
c. Fairly tired [ ]
d. Very tired [ ]

QUESTION 13

For some reason you have gone to bed several hours later than usual, but there is no need to get up at any particular time the next morning. Which ONE of the follwing events are you most likely to experience?

a. Will wake up at the usual time and will NOT fall asleep [ ]
b. Will wake up at the usual time and will doze thereafter [ ]
c. Will wake up at the usual time but will fall asleep again [ ]
d. Will NOT wake up until later than usual [ ]

QUESTION 14

One night you have to remain awake between 0400 and 0600h in order to carry out a night watch. You have no commitments the next day. Which ONE of the following alternatives will suit you best?

a. Would NOT to go to bed until the watch was over [ ]
b. Would take a nap before and sleep after [ ]
c. Would take a good sleep before and nap after [ ]
d. Would take ALL sleep before watch [ ]

QUESTION 15

You have to do two hours hard physical work. You are entirely free to plan your day and considering your own "feeling best" rhythm which ONE of the following times would you choose?

a. 8:00am – 10:00am (0800h – 1000h) [ ]
b. 11:00am – 1:0pm (1100h – 1300h) [ ]
c. 3:00pm – 5:00pm (1500h – 1700h) [ ]
d. 7:00pm – 9:00pm (1900h – 2100h) [ ]

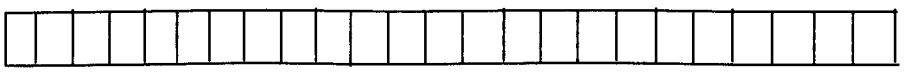
QUESTION 16

You have decided to engage in hard physical exercise. A friend suggests that you do this for one hour twice a week and the best time for him is between 10:00pm – 11:00pm (2200 and 2300h). Bearing in mind nothing else but your own "feeling best" rest how well do you think you would perform:

a. Would be on good form [ ]
b. Would be on reasonable form [ ]
c. Would find it difficult [ ]
d. Would find it very difficult [ ]

QUESTION 17

Suppose that you can choose your own work hours. Assume that you worked a FIVE hour day (including breaks)) and that your job was interesting and paid by results. Which FIVE CONSECUTIVE HOURS would you select:

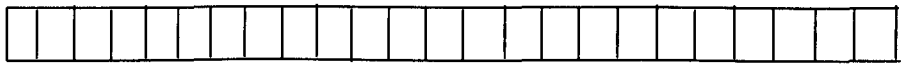


12 1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12

MIDNIGHT NOON MIDNIGHT

QUESTION 18

At what time of day do you think that you reach your "feeling best" peak?



12 1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12

MIDNIGHT NOON MIDNIGHT

QUESTION 19

One hears of "morning" and "evening" types. Which ONE of these types do you consider yourself to be?

a. Definitely a "morning" type [ ]
b. Rather more a "morning" than "evening" type [ ]
c. Rather more an "evening" than a "morning" type [ ]
d. Definitely an "evening" type [ ]

Appendix 7 – Nurse health questionnaire (from Standard Shiftwork Index)

Health questionnaire for nurses (from Standard Shiftwork Index)

Participant Code:

The information you give here will be treated in the strictest confidence. You may be invited to discuss some of your answers during your individual interview. If you feel uncomfortable with any of these questions here or in your interview, you do not have to give an answer.

Please indicate how frequently you experience the following while you are working nights, by circling the appropriate number: almost never/ quite often/ quite seldom/ almost always

		Almost Never	**Quite seldom**	**Quite often**	**Almost always**
(a)	How often is your appetite disturbed?	1	2	3	4
(b)	How often do you have to watch what you eat to avoid stomach upsets?	1	2	3	4
(c)	How often do you feel nauseous?	1	2	3	4
(d)	How often do you suffer from heartburn or stomach-ache?	1	2	3	4
(e)	How often do you complain of digestion difficulties?	1	2	3	4
(f)	How often do you suffer from bloated stomach or flatulence?	1	2	3	4
(g)	How often do you suffer from pain in your abdomen?	1	2	3	4
(h)	How often do you suffer from constipation or diarrhoea?	1	2	3	4
(i)	How often do you suffer from heart palpitations?	1	2	3	4
(j)	How often do you suffer from aches and pains in your chest?	1	2	3	4
(k)	How often do you suffer from dizziness?	1	2	3	4
(l)	How often do you suffer from sudden rushes of blood to your head?	1	2	3	4
(m)	Do you suffer from shortness of breath when climbing the stairs normally?	1	2	3	4
(n)	How often have you been told that you have high blood pressure?	1	2	3	4
(o)	Have you ever been aware of your heart beating irregularly?	1	2	3	4
(p)	Do you suffer from swollen feet?	1	2	3	4
(q)	How often do you feel "tight" in your chest?	1	2	3	4
(r)	Do you feel you have put on too much weight since beginning shiftwork?	1	2	3	4
(s)	Do you feel you have lost too much weight since beginning shiftwork?	1	2	3	4

Have you suffered from any of the following (diagnosed by your doctor)? Please tick as appropriate.

		Never	Before starting nightwork	Since starting nightwork
(a)	Chronic back pain	.....	.....	.....
(b)	Gastritis, duodenitis	.....	.....	.....
(c)	Gastric or duodenal ulcer	.....	.....	.....
(d)	Gall stones	.....	.....	.....
(e)	Colitis	.....	.....	.....
(f)	Sinusitis, tonsillitis	.....	.....	.....
(g)	Bronchial asthma	.....	.....	.....
(h)	Angina	.....	.....	.....
(i)	Severe heart attack (myocardial infarction)	.....	.....	.....
(j)	High blood pressure	.....	.....	.....
(k)	Cardiac arrhythmias	.....	.....	.....
(l)	Hypercholesterolaemia	.....	.....	.....
(m)	Diabetes	.....	.....	.....
(n)	Cystitis	.....	.....	.....
(o)	Kidney stones	.....	.....	.....
(p)	Eczema	.....	.....	.....
(q)	Chronic anxiety	.....	.....	.....
(r)	Depression	.....	.....	.....
(s)	Arthritis	.....	.....	.....
(t)	Haemorrhoids	.....	.....	.....
(u)	Varicose veins	.....	.....	.....
(v)	Anaemia	.....	.....	.....
(w)	Headaches	.....	.....	.....
(x)	Any other conditions you would like to mention			
	.....	.....	.....	.....

	Before starting nightwork	Since starting nightwork
On average, how many cigarettes have you smoked per week?	.....	.....
On average, how many units of alcohol have you drunk per week? (e.g. 1 unit = 1/2 pint lager/ bitter **or** 1 glass of wine **or** 1 measure of spirit)	.....	.....
On average, how many cups of caffeinated coffee/ tea/cola have you drunk each day?	.....	.....

Women only: If appropriate, and if you are not taking a birth control pill, has your menstrual cycle been:

		Extremely irregular	Fairly irregular	Fairly regular	Extremely regular
(a)	Before starting nightwork	1	2	3	4
(b)	Since starting nightwork	1	2	3	4

Women and men:
The following questions deal with **how you have felt during periods of nightwork over the past few months.** Please circle the most appropriate answer for each question. Please concentrate on present and recent complaints, not those that you have had in the distant past.

Have you recently:

(a)	been able to concentrate on what you are doing?	Better than usual	Same as usual	Less than usual	Much less than usual
(b)	lost much sleep over worry?	Not at all	No more than usual	Rather more than usual	Much more than usual
(c)	felt that you are playing a useful part in things?	More so than usual	Same as usual	Less than usual	Much less than usual
(d)	felt capable of making decisions about things?	More so than usual	Same as usual	Less than usual	Much less than usual
(e)	felt constantly under strain?	Not at all	No more than usual	Rather more than usual	Much more than usual
(f)	felt you could not overcome your difficulties?	Not at all	No more than usual	Rather more than usual	Much more than usual
(g)	been able to enjoy your normal day to day activities?	More so than usual	Same as usual	Less than usual	Much less than usual
(h)	been able to face up to your problems?	More so than usual	Same as usual	Less than usual	Much less than usual
(i)	been feeling unhappy and depressed?	Not at all	No more than usual	Rather more than usual	Much more than usual
(j)	been losing confidence in yourself?	Not at all	No more than usual	Rather more than usual	Much more than usual
(k)	been thinking of yourself as a worthless person?	Not at all	No more than usual	Rather more than usual	Much more than usual
(l)	been feeling reasonably happy all things considered?	More so than usual	About the same	Less so than usual	Much less than usual

Appendix 8 – Individual interviews pack
8.1 Nurse's individual qualitative interview example topic guide

Sleep, social roles and relationships of nurses who work at night
Nurse's individual interview – example topic guide

Introduction Tape recording	Consent
Confidentiality	Can stop at any time Not repeated to anyone, inc spouse/partner or any children or employer I transcribe
Purpose	Talk over the block of nights you've just done, health questionnaires and working at night more generally No set hypotheses – interested in what you have to say Like first interview, flexible, so don't wait for me to ask questions, just say what seems relevant at the time
Your actigraphy Explain...	Activity and light Ask for comments, clarification from participant booklet, audio sleep diary and joint interview
Nights overall Routines	Getting up after nights – more/less easy than getting up mornings? Compare sleep alone/with partner How much do you see of... children? partner? How do you feel they find it? Meals – drawing on participant booklet and joint interview Do you feel this is a routine? Or does it just happen? Compared to earlies/lates How did you find it first working nights How did you get into this pattern? Choices on working nights? Weekends? Can I ask for the salivas, are you taking oral contraceptives? Other medication?
More generally Draw on health questionnaire data PSQI and HO	Do you feel you get enough sleep?
Good things about working at night Work Home Overall	What do you value about working nights? Good bits? Perks? Clarify/recap previously mentioned things if appropriate

Concluding Nights and you in the future Participating Anything else to add? Thank you	Strategies to cope – recap/clarify? Overall, how do you feel about working at night? Continuing/stopping How have you found it? Sleep any differently? Attitudes or approaches any different? Anything I should change? Any questions?

8.2 Partner's individual qualitative interview example topic guide

Sleep, social roles and relationships of nurses who work at night
Spouse/partner's individual interview – example topic guide

Introduction Tape recording	Consent
Confidentiality	Can stop at any time Not repeated to anyone, inc spouse/partner or any children I transcribe
Purpose	Talk over the block of nights just done, and spouse/partner's work at night more generally No set hypotheses – interested in what you have to say Like first interview, flexible, so don't wait for me to ask questions, just say what seems relevant at the time
Your actigraphy Explain...	Activity Comments and clarification from participant booklet and joint interview
Nights overall Routines	How much do you see of partner when on nights? Time on your own? Children find it? How do you feel they find it? And partner?
Decisions	Eating generally any different over nights? Do you feel this is a routine? Compared to earlies/lates
Overall – differences?	How did you get into this pattern? Bedtime routine when partner on lates/nights How did you find it when partner was first working nights? Choices on working nights? Nights/earlies/lates How did you come to stop doing nights, give up job and go to college?
More generally	Follow up on answers to PSQI and H-O questionnaires Can I ask for the salivas, are you taking other medication?
Good things about spouse/partner working at night Work Home Overall	What do you value about partner working nights? Good bits? Perks? Clarify/recap previously mentioned things if appropriate What do you think your partner and children value about the nightshifts?
Concluding Nights in the future	Strategies – recap/clarify? How do you feel about spouse/partner working nights overall? Continuing/stopping

	Strategies
Participating	How have you found it? Sleep any differently? Attitudes or approaches any different? Anything I should change?
Anything else to add? Thank you	Any questions?

8.3 Older child's individual qualitative interview example topic guide

Sleep, social roles and relationships of nurses who work at night
Older child's individual interview – example topic guide

Introduction Tape recording Confidentiality Purpose	Thank you for doing the two weeks... Consent – less notes Can stop at any time Not repeated to anyone, inc parents or any siblings I transcribe Talk about you and your family, talk over the block of nights just done, and Mum's work at night generally Asking you to compare times when you parent works nights to when they don't, as also comparing with before they worked at night at all No set hypotheses – interested in what you say Designed to be flexible, so don't wait for me to ask questions, just say what seems relevant at the time
Yourself Ask them to tell me about themself Household tasks	School Ambitions Free time... How do you like to relax? Getting on with family? How do things like doing the washing, shopping, mowing the lawn, cooking, cleaning the windows, gardening, sorting out finances get done?
Good health and you What does good health mean to you? How healthy or unhealthy do you think you are?	How describe? Criteria? What might stop you from being in good health? Do you think sleep plays a part in health? In what way? How would you decide? Would you like to change anything about your health? What helps/stops you from doing that Any medicines you're taking
General routine	What? When? Where? School day/ not school day

Food, drink and meals Usually	When, where, with whom? How decided? Who gets it ready Follow up on participant booklet
Good sleep What is a good sleep for you?	Frequency Importance Why/Why not?
Normal sleep - timing What is your sleep like normally? Bedtime and wake time routines/role passages Changes in your sleep Problems	Bed time/Sleep time Folllow up on audio sleep diary and participant booklet Weekends? Over time Seasons Recently... What? How deal with?
Your actigraphy	Here it is What it means What do you make of this?
Your routine when parent working nights Day nights start Between nights Last night... How typical?	So parent's been working at night since...? What are things like when parentt's working nights? Take me through... Food? Going to bed? When you get home...? Who cooks? What's that like? What alters it? Weekends?
Relationships With parent	How do you get on with them during nights? Similarities/differences? During these 2 weeks In comparison with days Compared with before internal rotation How do parents find nights? If you could choose, when would you want parents to work?
Good things about parent working at night Work	What do you value about parent working nights?

Home Overall	Good bits? Perks? What do you think your parents/siblings think about the nightshifts?
Concluding Overall Participating Anything else to add? Thank you	How do you feel about your parent working nights? Do you think it affects you at all? Do you think it's important? What did you think when first mentioned the study? Why taking part? How have you found it? Actiwatch? Salivas? Food diary etc. ASD? Did you think you knew enough about it? Sleep any differently? Attitudes/approaches different? Anything I should change? Any questions?

8.4 Younger child's individual qualitative interview example topic guide

Sleep, social roles and relationships of nurses who work at night
Younger child's individual interview – example topic guide

Introduction Tape recording	Consent
Confidentiality	Can stop at any time Not repeated to anyone, inc parents or any siblings
Purpose	Talk over the block of nights just done, and parents work at night more generally No right/wrong answers - interested in what you say We'll have a chat and I'll ask you questions, but don't wait for me to ask you if you think of something about your family, sleep and parent's nightshifts Tell me if you don't understand what I've asked or if you don't want to tell me – I won't mind
"Ice-breaker"	What do you like doing in your free time? Interests? Hobbies? Treats? Holidays? Ambitions? Follow up on things mentioned in participant booklet and audio sleep diary
Yourself Everyday life	Follow up on participant booklet and audio sleep diary on general routine Health – how healthy do you think you are and why? Any medicines you're taking
Household tasks	Who does things like doing the washing, shopping, mowing the lawn, cooking, cleaning the windows, gardening, sorting out finances? Do you help?
Food, drink and meals Usually	From food and drink log? When, where, with whom? What sorts of things do you like to eat? Follow up on participant booklet
Good sleep	From sleep log/audio sleep diary? Do you like sleeping? Do you ever wake up and think I've had a really good sleep? Why is that? What helps/stops that?
Normal sleep - timing What is your sleep like normally?	Bed time/Sleep time Wake up time/Get up time When do you start going to bed, and why? What do you do between then and getting into bed? How and why these sleep times Weekdays/weekends

Bedtime and wake time routines/role passages	Follow up on participant booklet What like for you/what do? Baths, read, brush teeth, snack, hot drink? Use of Alarm clock Breakfast and food
Changes in your sleep Problems	Weekends? Over time Seasons When parent works nights? Feeling ill in the night What? How deal with?
Your actigraphy	Here it is What it means What do you make of this?
When parent working nights	Can you tell what is different for you when your parent works nights? Are there any differences? Activities? Sleep? Bedtime? Get up time? Food? Who cooks? Packed lunches? How happy/sad you feel? Which parent spends time with you? How much time with Mum/Dad? When does that happen?
Good things about parent working at night	What do you like about parent working nights? What do you look forward to? Clarify/recap previously mentioned things if appropriate
Concluding Overall Participating Anything else to add? Thank you	 How do you feel about your parent working nights? How have you found it? Sleep any differently? Attitudes or approaches any different? Anything I should change for other people? Any questions?

Appendix 9 – Form confirming receipt of incentive payment

Sleep, social roles and relationships of nurses who work at night

Payment Confirmation Form

This confirms that I, _____ ,

have received on behalf of my family a cheque for the sum of £150 for our participation in the research project "Sleep, social roles and relationships of nurses who work at night."

Signed _____ (Volunteer)

Date _____

Witness:

Name _____

Signed _____ (Researcher)

Appendix 10: Letter of thanks to participants

<University of Surrey headed paper>

<Date>

Dear <names of participating family members>,

Thank you very much for all your time and effort in participating in the study 'Sleep, social roles and relationships of nurses who work at night.' I have only just begun analysing the data, but I can already see you have provided me with a lot of very interesting and detailed insights into night work within your lives.

When the study findings are available, I will be in contact with a summary for you. This is likely to be towards the end of next year. If in the meantime you have any questions or concerns about the study or your participation in it, please do not hesitate to get in contact.

<If you know of anyone who might be interested in taking part in the study, I would be very pleased if you could let them have one of the enclosed posters.(included only where appropriate)>

Many thanks again and best wishes,

Elizabeth Thompson
Department of Sociology
University of Surrey
Guildford GU2 7XH
01483 876983
e.thompson@surrey.ac.uk

Appendix 11: Characteristics of Participants

This information is designed to provide further information about the ages and occupations of the study participants, and contextual material to support data extracts in Chapters 5-8.

Family	Family Member	Occupation
Alder	Nurse, 40s	Full time (Earlies, lates, <12 hour night shifts)
	Husband, 40s	Full time night shifts (mental health care)
	Pre-teenage daughter	Primary school
	Other family members (not participating)	Teenage daughter and older children living abroad
Baker	Nurse, 50s	Part time (28.75 hours: 12 hour day and night shifts)
	Husband, 50s	Full time weekday work including early mornings (engineer)
	Teenage son	Further education college, part time employment (paper round)
	Teenage son	Full time day and evening work (call centre)
	Other family members (not participating)	Older son co-resident
Brown	Nurse, 40s	Part time (30 hours: Earlies, lates, 12 hour night shifts)
	Husband, 40s	Full time day and evening work (mental health care support work)
	Pre-teenage daughter	Primary school
	Other family members (not participating)	Younger daughter (under 8) co-resident, grandparents nearby
Daly	Nurse, 40s	Full time (Earlies, lates, <12 hour night shifts)
	Husband, 50s	Full time weekday work with travel (IT)
	Teenage daughter	Further education college, part time employment (babysitting, hospitality)
	Other family members (not participating	Older daughter away at university
Davis	Nurse, 50s	Full time (Earlies, lates, <12 hour night shifts)
	Husband, 50s	Retired (civil service)
	Teenage daughter	Further education college
	Other family members (not participating)	Older daughter recently moved back in, two older children living nearby

Family	Family Member	Occupation
Evans	Nurse, 40s	Part time (30 hours: Earlies, lates, <12 hour night shifts)
	Husband, 40s	Full time weekdays (information management)
	Teenage daughter	Secondary school, part time employment (babysitting)
	Teenage son	Secondary school
	Pre-teenage son	Primary school
Field	Nurse, 30s	Part time (30 hours: Earlies, lates, <12 hour night shifts; additional one-to-one care on-call nights)
	Husband, 40s	Full time days, evenings and Saturdays (self-employed house refurbishment)
	Teenage son	Secondary school
	Pre-teenage son	Secondary school
	Pre-teenage daughter	Primary school
Harris	Nurse, 50s	Part time (30 hours: Earlies, lates, 12 hour day and night shifts)
	Husband, 50s	Full time days, evenings and some weekends (self-employed specialist retailer)
	Teenage son	Further education college, part time employment (retail)
	Teenage son	Secondary school
	Other family members (not participating)	Grandparents nearby
Jackson	Nurse, 30s	Full time (14 hour day shifts, <12 hour night shifts)
	Husband, 30s	Student (vocational) and part time agency work
	Pre-teenage son	Secondary school
	Pre-teenage daughter	Primary school
	Other family members (not participating)	Grandparents nearby
Jones	Nurse, 30s	Full time (Earlies, lates, 12 hour night shifts)
	Husband, 30s	Full time rotating shifts (police)
	Teenage daughter	Secondary school, part time employment (seasonal, catering)
	Teenage daughter	Secondary school, part time employment (catering)
Lowe	Nurse, 40s	Part time (30 hours: Earlies, lates, <12 hour night shifts)
	Husband, 30s	Full time weekdays (research)
	Pre-teenage son	Primary school
	Pre-teenage daughter	Primary school

Family	Family Member	Occupation
Martin	Nurse, 30s	Full time (Earlies, lates, <12 hour night shifts)
	Husband, 30s	Student and bank shifts and on-call night time support work (health care)
	Pre-teenage son	Primary school
	Other family members (not participating)	Husband's sister co-resident
Moore	Nurse, 30s	Full time (12 hour day and night shifts)
	Husband, 30s	Full time long weekdays with very early mornings and late evenings (analyst)
	Teenage daughter	Secondary school
	Pre-teenage son	Primary school
Patterson	Nurse, 50s	Full time (Earlies, lates, 12 hour night shifts)
	Husband, 50s	Full time weekdays, evenings and weekends (leisure location management)
	Pre-teenage son	Primary school
	Other family members (not participating)	2 teenage children (one son, one daughter) and 1 older daughter co-resident. 1 older daughter nearby. Grandparents nearby.
Robinson	Nurse, 40s	Full time (12 hour day and night shifts)
	Husband, 40s	Full time weekdays (health service management)
	Teenage son	Full time day and early evening work (call centre)
	Other family members (not participating)	3 older sons living nearby, grandparents nearby
Smith	Nurse, 40s	Part time (30 hours term time: Earlies, lates, <12 hour night shifts)
	Husband, 40s	Full time weekdays (insurance)
	Pre-teenage son	Primary school
	Teenage daughter	Secondary school
	Teenage daughter	Further education college
	Other family members (not participating)	Older daughter away at university, grandparents nearby
Short	Nurse, 40s	Full time + bank shifts
	Husband, 40s	Full time rotating shifts (public transport)
	Teenage son	Secondary school
	Other family members (not participating)	Younger son and daughter co-resident
Taylor	Nurse, 30s	Full time (Earlies, lates, 12 hour night shifts)
	Husband, 40s	Full time rotating shifts (health care)
	Teenage son	Secondary school
	Other family members (not participating)	Grandmother nearby

Family	Family Member	Occupation
Williams	Nurse, 40s	Full time (Earlies, lates, mornings, 12 hour night shifts)
	Husband, 50s	Full time weekdays (engineer)
	Teenage daughter	Further education college, part time employment (bar)
	Other family members (not participating)	2 older sons co-resident
Wilson	Nurse, 40s	Full time (Earlies, lates, <12 hour night shifts)
	Husband, 40s	Full time weekdays (print manager)
	Pre-teenage son	Primary school
	Teenage son	Further education college, part time employment (retail)
	Pre-teenage daughter	Secondary school
	Other family members (not participating)	Older daughter and grandson, and also grandparents nearby

Appendix 12 Shift patterns of part time and full time nurses

Shift Patterns of Part Time Nurses														
Baker	O	D	O	N	N	O	O	O	O	D	O	D	D	D
Brown	M N	O	L	O	M	O	O	E	N	N	O	L	O	O
Evans	O	E	O	O	O	N	N	N	O	E	O	S	M	S
Field	O	N	N	O	O	N	O	O	O	O	O	D	O	O
Harris	O	D	O	N	N	O	O	D	O	O	O	D	O	O
Smith	O	O	N	N	N	O	O	O	O	O	E	E	L	E

A = Afternoon

AL = Annual Leave

D = Long Day Shift

E = Early Shift

L = Late Shift

M = Morning Shift

N = Night Shift

O = Day Off

S = Standard Day Shift

TW – Twilight Shift

Shift Patterns of Full Time Nurses

Alder	L	O	E	N	N	N	O	O	O	L	L	O	O	L
Daly	AL	AL	ALM	ALE	O	O	O	O	E	E	N	N	N	O
Davis	E	E	S	E	O	N	N	N	O	O	O	AL	O	L
Jackson	D	O	O	O	A	N	N	N	O	D	O	O	D	O
Jones	O	N	N	N	O	O	E	E	E	E	O	O	O	E
Martin	O	O	L	L	E	O	O	N	N	N	N	N	O	O
Moore	D	O	TW	O	E	D	D	N	N	O	O	D	D	O
Patterson	E	O	N	N	O	L	E	E	O	E	O	O	L	E
Robinson	D	N	N	N	O	D	O	O	O	N	O	O	D	O
Short	O	O	N	O	N	N	O	N	O	O	E	O	O	E
Taylor	O	O	M	E	N	N	O	O	O	E	S	L	O	O
Williams	O	MN	N	N	N	O	M	O	M	O	O	D	D	M
Lowe	O	E	L	O	N	N	N	O	L	O	O	S	N	N
Wilson	L	S	O	E	N	N	N	O	L	E	E	O	E	E

Appendix 13: Sleep quality and morningness-eveningness of nurses and husbands

Each nurse and each nurse's husband independently completed the Horne-Östberg Morningness-Eveningness Questionnaire, (Horne and Östberg, 1976) (see Appendix 6) and the Pittsburgh Sleep Quality Index (Buysse et al, 1989) (see Appendix 5). The table below shows results of these questionnaires for nurses and their husbands.

Results from the Horne-Östberg Morningness-Eveningness Questionnaire indicate that the 20 nurses in this study have a Horne-Östberg score range of 38-67 and a mean score of 54.1 ± 8.6 (S.D). The mean Horne-Östberg score for nurses was therefore in the category for neither morning nor evening types. Six of the 20 nurses were classified as moderate morning types, 3 nurses were classified as moderate evening types and 11 nurses were neither morning nor evening types. One way ANOVA revealed no significant difference in Horne-Östberg scores between nurses and their husbands.

Results from the Pittsburgh Sleep Quality Index (PSQI) indicate that PSQI scores for the 20 nurses in this study ranged from 3 to 11 with a mean score of 6.4 ± 2.5. Individuals with a global PSQI score of 5 or more are considered to have poor sleep (Buysse et al, 1989). 13 of the nurses in this study (65%) had a PSQI score of 5 or more.

Results from the Horne-Östberg Morningness-Eveningness Questionnaire (see Appendix 6) indicate that nurses' husbands have a Horne-Östberg score range of 44-70 and a mean score of 57.3 ± 7.6. The mean Horne-Östberg score for husbands was therefore in the category for neither morning nor evening types. Among the nurses' husbands, 1 was a definite morning type, 6 were moderate morning types and 13 were neither morning nor evening types. Therefore none of the nurses' husbands were classified as evening types. When husbands are divided into those who work nights (n=4) and who have day working and night sleeping patterns (n=16), the mean Horne-Östberg score was little different (slightly more morning type) for those who work nights (56.25 ± 8.5) compared with those who do not work nights (57.5 ± 7.6). One way ANOVA revealed no significant difference in Horne-Östberg scores between nurses and their husbands, or between husbands who work at night and other husbands.

Results from the PSQI (see Appendix 5) indicated that the range of PSQI scores for husbands was 2 to 11 with a mean score of 6.9 ± 3.0. 15 of the husbands in this study (75%) also had a PSQI score of 5 or more (classified as poor sleep (Buysse, et al. 1989)). When husbands' scores were separated into those who worked nights (n=4) and those who did not work nights (n=16), there was a significant difference ($p<0.05$) in PSQI scores for husbands who worked at night (mean 9.8 ± 2.6) and husbands who did no night work (6.2 ± 2.6). Therefore, those husbands working at night had a mean PSQI score which was 3.6 points higher than those who did not do night work.

Family	Family Member	Horne-Őstberg Score	Morningness-Eveningness Type (from Horne-Őstberg)	PSQI Score	Sleep Quality Label (from PSQI)
Alder	Nurse	61	Moderate morning	9	Poor
	Husband	62	Moderate morning	11	Poor
Baker	Nurse	63	Moderate morning	4	Not Poor
	Husband	66	Moderate morning	6	Poor
Brown	Nurse	67	Moderate morning	9	Poor
	Husband	53	Neither morning nor evening	10	Poor
Daly	Nurse	56	Neither morning nor evening	4	Not Poor
	Husband	57	Neither morning nor evening	12	Poor
Davis	Nurse	52	Neither morning nor evening	7	Poor
	Husband	52	Neither morning nor evening	3	Not Poor
Evans	Nurse	55	Neither morning nor evening	7	Poor
	Husband	53	Neither morning nor evening	4	Not Poor
Field	Nurse	62	Moderate morning	6	Poor
	Husband	63	Moderate morning	2	Not Poor
Harris	Nurse	57	Neither morning nor evening	7	Poor
	Husband	55	Neither morning nor evening	6	Poor
Jackson	Nurse	41	Moderate evening	4	Not Poor
	Husband	68	Moderate morning	8	Poor

Family	Family Member	Horne-Őstberg Score	Morningness-Eveningness Type (from Horne-Őstberg)	PSQI Score	Sleep Quality Label (from PSQI)
Jones	Nurse	58	Neither morning nor evening	6	Poor
	Husband	44	Neither morning nor evening	6	Poor
Lowe	Nurse	38	Moderate evening	6	Poor
	Husband	58	Neither morning nor evening	5	Poor
Martin	Nurse	46	Neither morning nor evening	5	Poor
	Husband	58	Neither morning nor evening	6	Poor
Moore	Nurse	61	Moderate morning	11	Poor
	Husband	68	Moderate morning	9	Poor
Patterson	Nurse	54	Neither morning nor evening	10	Poor
	Husband	57	Neither morning nor evening	10	Poor
Robinson	Nurse	51	Neither morning nor evening	11	Poor
	Husband	47	Neither morning nor evening	4	Not Poor
Short	Nurse	46	Neither morning nor evening	6	Poor
	Husband	49	Neither morning nor evening	7	Poor
Smith	Nurse	58	Neither morning nor evening	5	Not Poor
	Husband	57	Neither morning nor evening	6	Poor

Family	Family Member	Horne-Östberg Score	Morningness-Eveningness Type (from Horne-Östberg)	PSQI Score	Sleep Quality Label (from PSQI)
Taylor	Nurse	53	Neither morning nor evening	3	Not Poor
	Husband	62	Moderate morning	12	Poor
Williams	Nurse	38	Moderate evening	4	Not Poor
	Husband	70	Definite morning	7	Poor
Wilson	Nurse	65	Moderate morning	4	Not Poor
	Husband	46	Neither morning nor evening	4	Not Poor

Appendix 14: Health of nurses (from Standard Shiftwork Index)

This Appendix includes information from the Physical and General Health Questionnaires from the Standard Shiftwork Index (Barton et al 1995a; 1995b; see Appendix 7). The questions ask for self-evaluation of the frequency of physical symptoms for conditions frequently associated with night work, assessment of whether particular diagnoses had been made before or since commencement of night work, alcohol and caffeine consumption and self-rating for several indices of mood "over the past few months." Information about nurses' Body Mass Index is also included in this Appendix.

Nurses' physical and general health

Results from these questionnaires indicate that nurses in this study have a mean score of 79.82 ± 8.51 for the Physical Health Questionnaire (51 parameters, maximum score 176) and 28.95 ± 6.46 for the General Health Questionnaire (12 parameters, maximum score 48).

Physical health symptoms for which the mean score was greater than 2 (2 represents "Same as usual" or "No more than usual" and higher scores indicate more negative physical symptoms) and were therefore more prevalent among participating nurses include appetite disturbance (mean score 2.74 ± 0.87 S.D.), feeling nauseous (2.35 ± 0.88), indigestion (2.16 ± 0.96), bloating and flatulence (2.60 ± 1.00), shortness of breath (2.05 ± 1.05), and gaining weight (2.45 ± 1.15). The prevalence of these symptoms among these night working nurses reflects the main physical effects of night work established by other research: disturbed appetite and digestion, and increased risk of cardiovascular disease and weight gain (see Rajaratnam and Arendt, 2001).

However, in contrast with literature which suggests night work often disturbs the menstrual cycle (see Labyak et al, 2002), there was no significant difference in nurses' rating of the regularity of their menstrual cycles before and since night work had commenced.

Nurses' alcohol consumption

Although nurses reported that their mean alcohol consumption had increased from a mean of 1.47 ± 1.71 units per week before night work to a mean of 2.60 ± 3.66 units per week since night work had commenced this difference was not significant. The lack of significant increase in alcohol consumption since night work had commenced may be affected by large differences between nurses, including several nurses who never drink alcohol and several whose mean alcohol consumption was much greater than the mean consumption per week. Additionally, many nurses attribute their changed alcohol consumption patterns to their age and stage of life rather than to their working pattern.

Nurses' caffeine consumption

Mean cups of caffeinated drinks (coffee, tea, coke) consumed per day increased significantly ($p<0.050$) from 5.00 ± 2.00 before night work and 5.89 ± 2.06 since night work had started. Although this was a significant increase in consumption of caffeinated drinks, most of the nurses reported drinking tea rather than coffee and many reported in qualitative interviews that there was rarely time for any drinks while at work. Therefore, it seems unlikely that these caffeinated drinks have important effects on nurses' sleep.

Nurses' mood and strain

Results from the General Health Questionnaire suggest that the nurses in this study had been feeling under particular strain in the few months prior to participation in the study. For this questionnaire, a higher score indicates worse mood. Of the twelve parameters, mean scores for nurses in this study were above the "same as usual" or "no more than usual" score of 2 for eleven parameters. Although for "thinking of yourself as a worthless person" the mean score was just 1.75 ± 0.85, all the other mean scores were above 2: "able to concentrate on what you are doing" 2.75 ± 0.79; "lost much sleep over worry" 2.55 ± 0.95; "playing a useful part in things" 2.25 ± 0.55; "capable of making decision about things" 2.35 ± 0.67; "constantly under strain" 2.80 ± 0.70; "could not overcome your difficulties" 2.30 ± 0.73; "able to enjoy your day to day activities" 2.85 ± 0.59; "able to face up to your problems" 2.50 ± 0.76; "unhappy and depressed" 2.35 ± 0.99; "losing confidence in yourself" 2.20 ± 1.01; "reasonably happy all things considered" 2.30 ± 0.66.

Although the questionnaire asks nurses to assess how they have been feeling over the last few months, and the wording of the answer options suggests that these last few months should be compared with "usual", it was uncertain whether nurses defined "usual" as their habitual state or a more ideal state, perhaps in the absence of night work. Additionally, many of the nurses in this study reported that their job was very stressful independently of the night work component, and a considerable number of the nurses were concerned about their job security.

Nurses' Body Mass Index

Nurses' provided their height and weight measurements during their individual interview or later by email. Body Mass Index was calculated for each nurse based on these measurements. The range was 21-44 with a mean value of 28.12 ± 5.58. 7 of the nurses were in the normal range (18.5-24.9), 7 nurses were within the overweight range (25-29.9), five nurses were in the obese range (30-39.9) and one nurse was in the very obese range (40+).

Appendix 15: Medication taken by participants

This information has been compiled from participants' self reports during individual interviews, audio sleep diaries and the 2 week participant booklets.

Family	Family Member	Medication
Alder	Nurse	Some cough mixture and occasional ibuprofen on waking
	Husband	Some cough mixture, paracetamol and occasional panadol
	Pre-teenage daughter	None
Baker	Nurse	None
	Husband	Fleckalide evening; Clopidogrel and Seratide morning
	Teenage son	None
	Teenage son	None
Brown	Nurse	Contraceptive pill; ibuprofen for any headaches
	Husband	Insulin – Levemir 60 units before bed; Insulin – Novorapid 70 units daily in 3 doses before meals; Metformin 850mg 1 tablet twice daily; Metformin 500mg 2 tablets once daily; Atorvastatin 20mg once daily
	Pre-teenage daughter	None
Daly	Nurse	Temazepam lunchtime day 13; aspirin bedtime day 6
	Husband	1000 mg metformin; Terbinafine for athlete's foot; 35 mg aspirin evening; Lisinopril 2.5 mg morning for blood pressure
	Teenage daughter	Some paracetamol
Davis	Nurse	Maybe a couple of headache tablets one morning
	Husband	None
	Teenage daughter	None

Family	Family Member	Medication
Evans	Nurse	Mirena contraceptive coil
	Husband	Antihistamine for hay fever – not Claratin (most days)
	Teenage daughter	Piriton for hay fever (Saturday)
	Teenage son	Inhalers - Seretide each evening; Glyconal as reliever
	Pre-teenage son	One day bumped head at school
Field	Nurse	None
	Husband	None
	Teenage son	Equasym XL 30 mg (Methylphenidate Hydrochloride) morning
	Pre-teenage son	Equasym XL 30 mg (Methylphenidate Hydrochloride) morning
	Pre-teenage daughter	None
Harris	Nurse	None
	Husband	"for my back I probably took ibrufen occasionally umm for the cold well [wife] made me her special concoction which is whisky and something or other [laughing] which absolutely brilliant and probably sort of aspirin"
	Teenage son	Just multivits and Omega 3 tablets
	Teenage son	None
Jackson	Nurse	None
	Husband	Lemsip for cold during 2 weeks
	Pre-teenage son	Inhalers for asthma during cold in 2 weeks
	Pre-teenage daughter	Calpol for cold during 2 weeks
Jones	Nurse	None
	Husband	None
	Teenage daughter	None
	Teenage daughter	Contraceptive pill

Family	Family Member	Medication
Lowe	Nurse	Some paracetamol in second week
	Husband	None
	Pre-teenage son	None
	Pre-teenage daughter	None
Martin	Nurse	None
	Husband	None
	Pre-teenage son	None
Moore	Nurse	None
	Husband	None
	Teenage daughter	Tuesday/Wednesday first week: paracetamol
	Pre-teenage son	None
Patterson	Nurse	Thyroxine and pain killers occasionally
	Husband	Lisinopril and Amlodipine – morning (blood pressure)
	Pre-teenage son	None
Robinson	Nurse	Carbamazepine and oxytetracyclin
	Husband	Cannabis, strepsils, couple of spoons of Galloway's
	Teenage son	None
Smith	Nurse	"I take at night time I have to take it's called ranitidine [Zantac] that's for my stomach problems and I also take atorvastatin.... occasionally I have to take inhalers for mild asthma... sometimes ibrufen because I hurt my back...or codydromol " but not in the 2 weeks
	Husband	Paracetamol during part of the two weeks (listed in participant booklet)
	Pre-teenage son	Calpol and Junior Neurofen during part of 2 weeks
	Teenage daughter	Occasional paracetamol
	Teenage daughter	Occasional paracetamol; Dianette contraceptive daily

Family	Family Member	Medication
Short	Nurse	None
	Husband	Protein shakes (listed in food diary) and possibly some paracetamol
	Teenage son	None apart from vitamin supplement mentioned in food diary
Taylor	Nurse	Just vitamins
	Husband	"gabapentin for neuralgia in the face"; diazemol or diazepam occasionally but not during the two weeks
	Teenage son	Vitamins; Mum says antihistamines
Williams	Nurse	Hypertension tablets
	Husband	Arthotex 75mg; amlopidine 5 mg; 2 asthma sprays becanide and something else red and blue; quite a lot of paracetamol
	Teenage daughter	Some Lemsip and Tunes
Wilson	Nurse	Vitamin pills; some hayfever medicine – Piriton first Saturday
	Husband	Maybe havfever medicine a couple of days
	Pre-teenage son	None
	Teenage son	10 cigarettes a day
	Pre-teenage daughter	Some Calpol tablets in first few or last few days

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